Fanless All-in-one Panel Pc with AMD EXPERT-LX-800 CPU TFT LCD,Wireless LAN,Touch Screen and IP 64 Protection

User Manual

Revision

MODEL	EXPERT-LX Series Flat Panel PC User Manual	
Revision Number	**Description**	**Date of Issue**
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Packing List

NOTE:

If any of the components listed in the checklist below are missing, please do not proceed with the installation. Contact the TOPSCCC reseller or vendor you purchased the EXPERT-LX series from or contact an TOPSCCC sales representative directly. To contact an TOPSCCC sales representative, please send an email to sales@topsccc.com.tw.

The items listed below should all be included in the EXPERT-LX series package.

- 1 x Power cord
- 1 x Power adapter
- 1 x Touch pen
- 1 x User Manual and driver CD
- 1 x Panel mounting kit (optional)
- 1 x Wall mounting kit (optional)
- 1 x 128MB CompactFlash® card with Windows CE 5.0 pre-installed (optional)
- 1 x 1GB CompactFlash® card with Windows XPE pre-installed (optional)

Images of the above items are shown in **Chapter 3** on **page 26**.

Precautions

SAFETY PRECAUTIONS

1. Prior to installing, moving, and modifying the panel PC, make sure that the unit's power is turned off and the power cord is disconnected.
2. Do not apply voltage levels that exceed the specified voltage range. Doing so may cause fire or an electrical shock.
3. Electric shock can occur if the panel is opened. Do not drop or insert any objects into the ventilation openings of the panel PC.
4. Only qualified engineers from certified system integrators or VARs are allowed to make necessary functional modifications to the panel PC, e.g., adding a touch screen. TOPSCCC offers the customization service on a pre-order basis.
5. If considerable amount of dust, water, or fluids entered the panel PC, turn off the power supply immediately, unplug the power cord, and contact the vendor.
6. Explosions may occur with installations in environments where flammable gases are present.
7. Fault-tolerant and failsafe designs should be implemented with the use of the series models on transportation vehicles, ships, safety/security devices, or medical devices not related to life-support functionalities. Users/integrators should take the responsibility for implementations with adequate levels of reliability and safety.
8. Preventive designs should be implemented so as to avoid the communications faults between the panel PC and the PC/workstation/terminals that controls it.

HANDLING PRECAUTIONS

1. Do not drop the panel PC against a hard surface. Doing so may damage the display.
2. Do not strike or exert excessive force onto the touch panel.
3. Touching the touch panel using a sharp object may damage the LCD panel.
4. Avoid environments exposed to direct sunlight, dust, or chemical vapors.
5. The panel PC is actively cooled. In no circumstances should the panel PC operate with the openings obstructed by foreign objects. However, the ambient temperature of the installation site should be observed and controlled

to avoid overheating the panel PC.

6. Condensation might form inside the panel PC chassis if exposed to sudden changes in temperature.
7. Carefully route the power cord so that people cannot step on it. Do not place anything over the power cord.
8. If the equipment should be left unused for an extended period of time, disconnect it from the power source to avoid damage by transient over-voltage.
9. If any of the following situations arises, get the equipment checked by service personnel:
   - The power cord or plug is damaged.
   - Liquid has penetrated into the equipment.
   - The equipment has been exposed to moisture.
   - The equipment does not work properly, or the user cannot get it to work according to the user manual.
   - The equipment has been dropped and damaged.
   - The equipment shows obvious signs of breakage.

WARNING!

Any changes or modifications made to the equipment that are not expressly approved by the relevant standards could void the authority to operate the equipment.

MAINTENANCE AND CLEANING

Note the following precautions before beginning to clean the Panel PC.

When cleaning any single part or component of the computer, please read and understand the details below fully.

- Except for the properly installed front LCD panel, never spray or squirt liquids directly onto any computer component. To clean the device, please rub it with a piece of dry and soft cloth or a slightly moistened cloth with the exterior casing.

- The interior of the Panel PC does not require cleaning. Keep fluids away from the Panel PC and the interior of it.
- Be cautious of the tiny removable components when using a vacuum cleaner to absorb the dirt on the floor.
- Turn the system off before cleaning up the Panel PC.
- Never drop any tiny objects through the openings of the Panel PC or get circuit board damp or wet.
- Be cautious of all kinds of cleaning solvents or chemicals when using it for the sake of cleaning. Some individuals may be allergic to the ingredients.
- Avoid any food, drink or cigarette around the Panel PC.

CLEANING TOOLS

Although many companies have created products to help improve the process of cleaning the computer and peripherals, users can also use household items to clean their computers and peripherals. Below is a list of items to use while cleaning the computer or computer peripherals.

Please keep in mind that some components in the computer may only be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- ***Cloth*** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, it is recommended to rub it with a piece of cloth.
- ***Water or rubbing alcohol*** – Moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer.
- Unknown solvents may be harmful to the plastics parts.
- ***Vacuum cleaner*** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- ***Cotton swabs*** - Cotton swabs moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in the keyboard, mouse, and other locations.

- ***Foam swabs*** - Whenever possible it is better to use lint free swabs such as foam swabs.

ESD PRECAUTIONS

Observe all conventional anti-ESD methods while handling the components contained within the LCD should the need arise for adding a functionality. The use of a grounded wrist strap and an anti-static work pad is recommended. Avoid dust and debris or other static-accumulating materials in the work area.

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Chapter

1

Introduction

1.1 EXPERT-LX Series Flat Panel PC Overview

The EXPERT-LX series flat panel PC is a flexible, multi-functional and fanless flat panel PC that can be applied in diverse operational environments and implemented in multi-faceted applications. The EXPERT-LX series comes fully kitted with a high-performance motherboard and a host of other peripheral interface connectors. The integrated wireless LAN module and PIFA antenna ensure an uninterrupted wireless connection. The EXPERT-LX series is designed for ease of use and easy installation.

1.1.1 Model Variations

The models of EXPERT-LX series are listed in **Table 1-1**.

EX-9118A-LX	**CPU**	**LCD**	**Memory**	**Wireless LAN**	**Touch screen**
/WT-R/256MB	AMD® LX800	7”	256MB DDR	Yes	Yes
/WT-R/512MB	AMD® LX800	7”	512MB DDR	Yes	Yes
EX-9119A-LX	**CPU**	**LCD**	**Memory**	**Wireless**	**Touch screen**
/WT-R/256MB	AMD® LX800	8.4”	256MB DDR	Yes	Yes
/WT-R/512MB	AMD® LX800	8.4”	512MB DDR	Yes	Yes
EX-9123A-LX	**CPU**	**LCD**	**Memory**	**Wireless**	**Touch screen**
/WT-R/256MB	AMD® LX800	12.1”	256MB DDR	Yes	Yes
/WT-R/512MB	AMD® LX800	12.1”	512MB DDR	Yes	Yes

Table 1-1: Model Variations

1.1.2 Applications

The EXPERT-LX series all-in-one panel PC is designed for multiple applications. Its durability and strength makes it an ideal choice for public access computers. Some possible applications include:

- Vehicle Interior device

  - Truck PC
  - Logistic car PC
- General computing
  - PC based testing center
  - Distance learning
- Industrial applications
  - Plant environment monitoring system
  - Factory automation platform
  - Manufacturing shop flow
  - Equipment and device control
- Home and building automation
  - Digital surveillance system
  - E-home platform
  - Home IA control terminal
- Self-Service Kiosk
  - Receptionist kiosk in hotel and business premises
  - Self registration terminal in hospital and airport
  - Ticket vending machine for transportation use

1.1.3 Standard Features

Some of the standard features of the EXPERT-LX series flat panel PC include:

- Fanless Design
- AMD® Geode LX-800 processor
- Rugged mechanism design with ABS/PC case
- IP 64 dustproof and waterproof front panel
- One 256MB/512MB DDR memory module pre-installed
- Wireless LAN integrated with PIFA antenna
- Dual 10/100Mbps Ethernet support
- One CompactFlash® Type II socket support
- Simplified installation process
- RoHS compliance

1.2 External Overview

1.2.1 General Description

The EXPERT-LX series is a stylish flat panel PC that comprises of a screen, rear panel, top panel, bottom panel and two side panels (left and right). An ABS/PC plastic front frame surrounds the front screen. The rear panel provides screw holes for a wall-mounting bracket compliant with VESA FDMI standard. The bottom panel provides access to external interface connectors that include LAN, USB 2.0, serial port, reset button, power connector and power switch.

1.2.2 Front Panel

The front side of the EXPERT-LX series is a flat panel TFT LCD screen surrounded by an ABS/PC plastic frame.

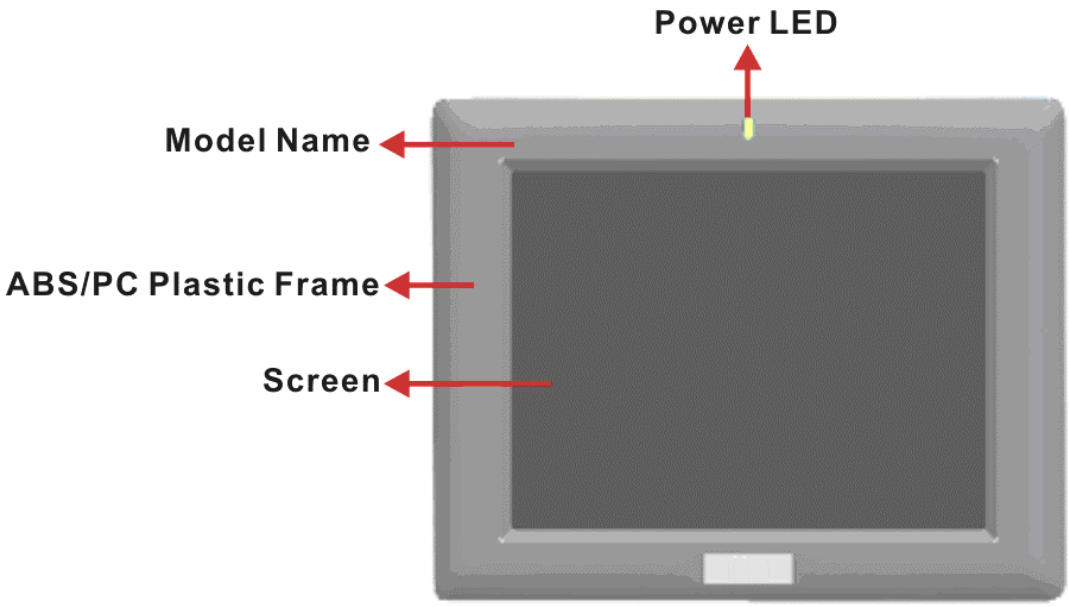


Figure 1-1: Front View

1.2.3 Rear Panel

The rear panel provides access to retention screw holes that support the wall mounting. Refer to **Figure 1-2**.

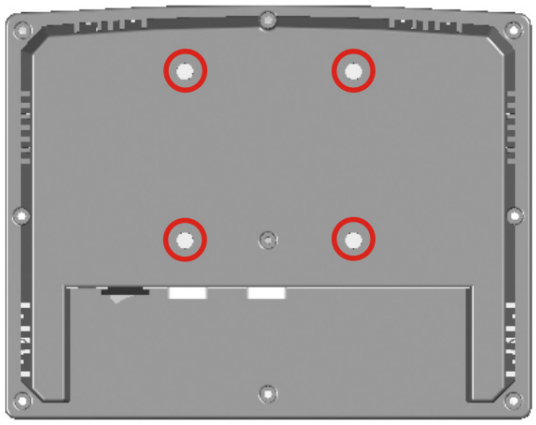


Figure 1-2: EX-9118A-LX/EX-9119A-LX Rear View

1.2.4 Top Panel and Side Panels

The top panel and side panels of EXPERT-LX series provides access to slots that support panel mount and rack mount (**Figure 1-3** and **Figure 1-4**).

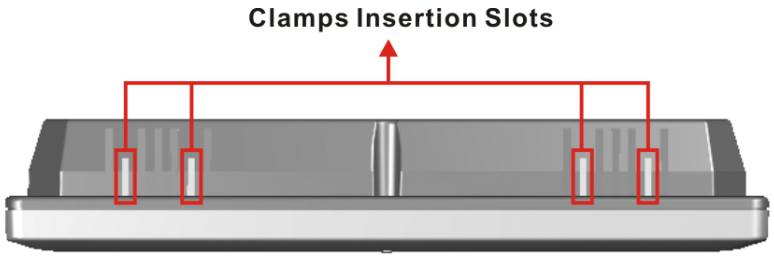


Figure 1-3: EX-9119A-LX Top View

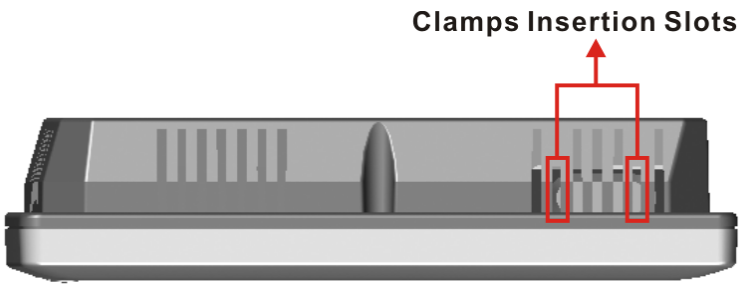


Figure 1-4: EX-9119A-LX Side View

1.2.5 Bottom Panel

The bottom panel of the EXPERT-LX series has the following I/O interfaces (**Figure 1-5**):

- 2 x RS-232 serial port connectors
- 1 x AC power adapter connector
- 2 x RJ-45 10/100Mbps Ethernet connectors
- 2 x USB 2.0 connectors
- 1 x Power switch
- 1 x Reset button

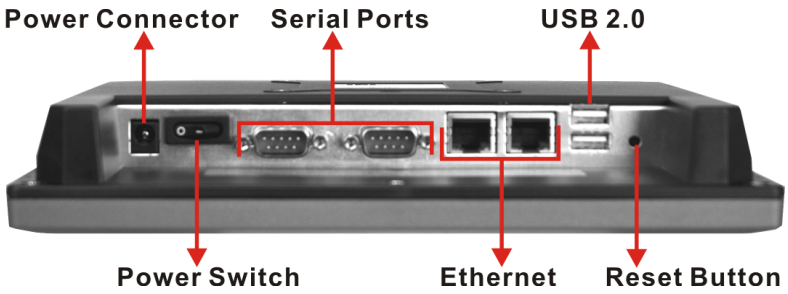


Figure 1-5: EXPERT-LX Series Bottom View

1.3 Internal Overview

The EXPERT-LX series internal components are protected in an aluminum chassis inside the plastic back cover. The motherboard, wireless LAN module and DDR memory module are installed on a metal sheet that protects the rear of the TFT LCD screen. Below the metal sheet is a circuit board that is connected to the screen and the motherboard.

1.4 Specifications

1.4.1 Preinstalled Hardware Components

The EXPERT-LX series flat panel PC has the following preinstalled components:

- 1 x Motherboard
- 1 x TFT LCD screen
- 1 x Touch screen
- 1 x Inverter
- 1 x Wireless LAN module
- 1 x DDR memory module

The technical specifications for some of these components and the system are shown in the sections below.

1.4.2 System Specifications

The technical specifications for the EXPERT-LX series systems are listed in **Table 1-2.**

SPECIFICATION	EX-9118A-LX	EX-9119A-LX	EX-9123A-LX
Front Panel	ABS/PC plastic front panel		
Chassis	Aluminum chassis		
LCD Panel	7”	8.4”	12.1”
Resolution	800 x 480	800 x 600	1024 x 768
Brightness	220 cd/m^2	220 cd/m^2	450 cd/m^2
Contrast Ratio	400:1	500:1	700:1
Viewing Angle (H-V)	140/100	130/110	160/160
Backlight MTBF	30000	20000	50000
Touch Screen	4-wire resistive type	4-wire resistive type	5-wire resistive type
SSD	CompactFlash® Type II		
Audio	AMP 1.5W + AMP 1.5W (internal speaker)		
Extension	1 x Mini PCI (for wireless LAN module)		
Drive Bay	N/A	N/A	1 x 2.5” HDD bay

SPECIFICATION	EX-9118A-LX	EX-9119A-LX	EX-9123A-LX
I/O	2 x RS-232 serial port 2 x 10/100 Mbps Ethernet port 2 x USB 2.0 port 1 x Power switch 1 x Reset button		
Power	12V, 45W DC power adapter		
Power Consumption	20W	20W	29W
Mounting Feature	Panel, Wall, Arm, Stand		
Operating Temperature	0ºC ~50ºC	0ºC ~50ºC	0ºC -50ºC 0ºC -40ºC (using HDD)
Relative Humidity	5 ~ 80% RH, non-condensing		
Vibration	5 - 17Hz, 0.1” double amplitude displacement. 17 - 640Hz, 1.5G acceleration, peak to peak.		
Shock	10G Acceleration, peak to peak (11ms)		
Dimension (W x H x D)	226 x 140 x 41	234 x 184 x 42	304 x 246 x 50
Net/Gross Weight	0.6 Kg	0.8 Kg	1.8 Kg
Front Panel Protection	IP 64 compliant		
Safety	Meets UL / CE / CCC		
EMC	Meets CE / FCC class B		

Table 1-2: EXPERT-LX Series System Specifications

1.4.3 Motherboard Specifications

The EXPERT-LX series come with an EXMB-LX800 motherboard. The technical specifications of the motherboard are listed in **Table 1-3**.

Specification	EXMB-LX800
CPU	AMD® Geode™ LX 800 500Mhz
Southbridge Chipset	AMD® Geode™ CS5536
Display	CRT integrated in AMD® Geode™ LX800 24-bit TTL integrated in AMD® Geode™ LX800 18-bit LVDS supported by buffer (8.4")
Memory	Supports one 1GB DDR 333/400 200-pin SO-DIMM SDRAM module
Extension	One mini PCI slot
BIOS	Award BIOS
SSD	CFII
Super I/O	N/A for legacy free
Audio	AC'97 Codec Realtek ALC203, AMP 1-2W
LAN	10/100 Base-T dual RTL8100C
COM	Two RS-232 serial ports
IDE	One 44-pin IDE connects to two IDE devices
Touch Screen Controller	DMC9000
Power Supply	12V ATX power support
Dimensions	102mm x 186mm

Table 1-3: Motherboard Specifications

1.4.4 Flat Panel Screen Specifications

The EXPERT-LX series come with a TFT LCD monitor at the front of the flat panel PC (see **Figure 1-1**). The specifications for the LCD monitor are shown in **Table 1-4** below.

SPECIFICATION	EX-9118A-LX	EX-9119A-LX	EX-9123A-LX
Model	DATA IMAGE FG070050DNCWAG01	AUO-G084SN03	CMO-G121X1-L01
Size	7”	8.4”	12.1”
Resolution	800 x 480 (VGA)	800 x 600 (SVGA)	1024 x 768 (XGA)
Active Area (mm)	152.4 x 91.44	170.4 x 127.8	245.76 x 184.32
Pixel Pitch (mm)	0.1905 x 0.1905	0.213 x 0.213	0.240 x 0.240
LCD Color	Native 262K colors	Native 262K colors	Native 262K colors
View Angel (H/V)	140/100	130/110	160/160
Brightness (cd/m^2)	220	220	450
Contrast Ratio	400:1	500:1	700:1
Response Time (ms)	12(Tr) / 18(Tf)	10(Tr) / 25(Tf)	6(Tr) / 17(Tf)
Power Consumption (W)	2.2	3.3	4
Supply Voltage (V)	3.3	3.3	3.3
Backlight	1 CCFL	1 CCFL	2 CCFL
Backlight MTBF (hrs.)	30000	20000	50000
Outline Dimensions (mm)	165.0 x 104.0 x 5.5	203.0 x 142.5 x 5.7	260 x 204 x 12.2

Table 1-4: TFT LCD Monitor Specifications

1.4.5 Touch Screen Specifications

The EXPERT-LX series come with an analog resistive type touch panel. **Table 1-5** lists the touch panel specifications.

SPECIFICATION	EX-9118A-LX	EX-9119A-LX	EX-9123A-LX
Model	PANJIT 1070404C	PANJIT 1084403B	PANJIT 1121505B
Type	Analog Resistive Type Touch Panel		
Wire Type	4-wire	4-wire	5-wire
Viewing Area (mm)	154.90 x 93.94	130.75 x 173.38	188.0 x 250.0
Active Area (mm)	152.40 x 91.44	127.78 x 170.38	185.0 x 246.0
Total Transmission	78%		
Maximum Voltage	DC7V		
Connector Type	FPC.		
Operating Temperature	-10°C ~ 60°C	-10°C ~ 50°C	
Operating Humidity	20% ~ 90% RH		
Storage Temperature	-20°C ~ 70°C		
Storage Humidity	20% ~ 90% RH		
Dimensions	165.0 x 104.0 x 1.4	145.53 x 188.04 x 2.1	204 x 268 x 2.1

Table 1-5: Touch Panel Specifications

1.5 Dimensions

1.5.1 EX-9118A-LX Dimensions

The dimensions of the EX-9118A-LX flat panel PC are shown in **Figure 1-6** below.

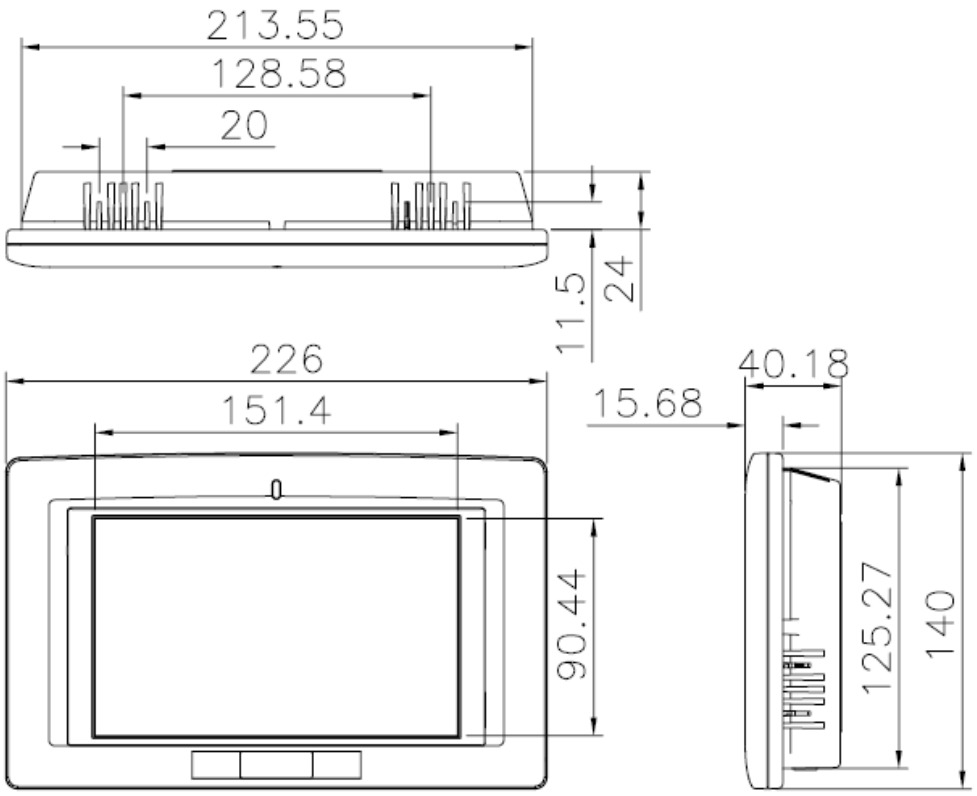


Figure 1-6: EX-9118A-LX Dimensions (units in mm)

1.5.2 EX-9119A-LX Dimensions

The dimensions of the EX-9119A-LX flat panel PC are shown in **Figure 1-7** below.

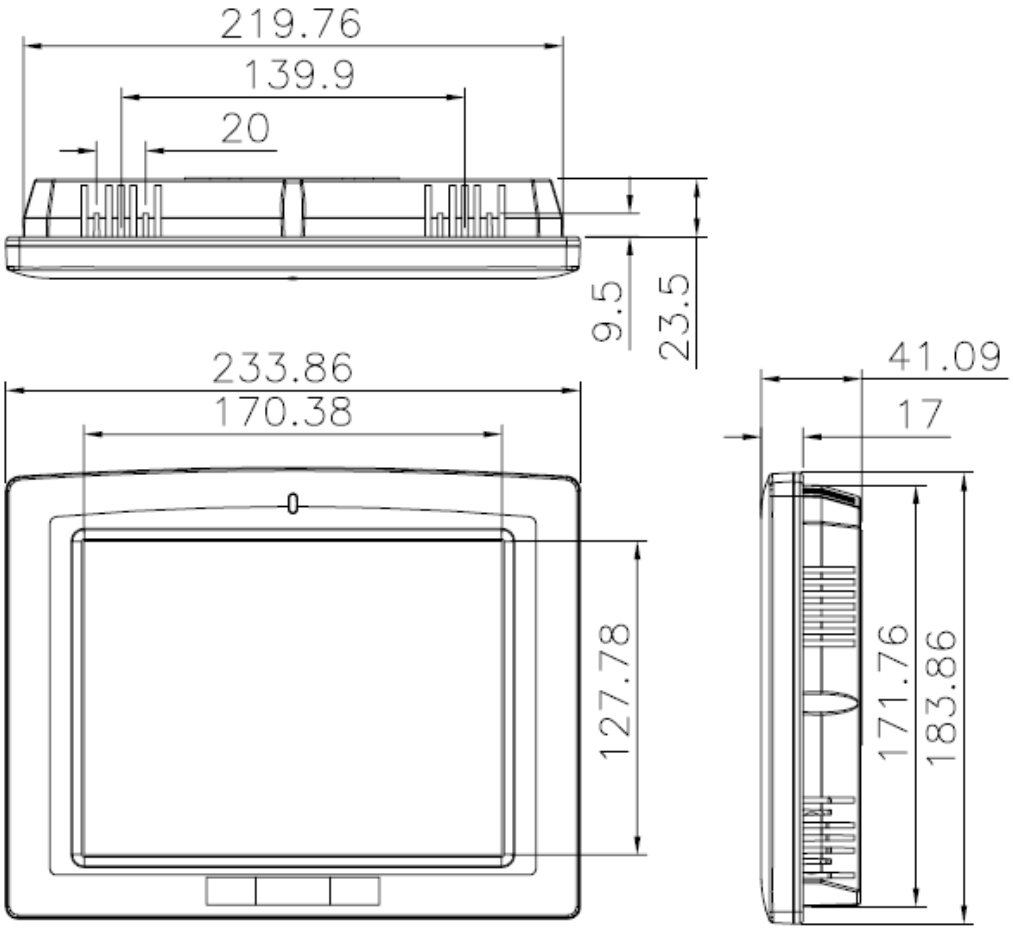


Figure 1-7: EX-9119A-LX Dimensions (units in mm)

1.5.3 EX-9123A-LX Dimensions

The dimensions of the EX-9123A-LX flat panel PC are shown in **Figure 1-7** below.

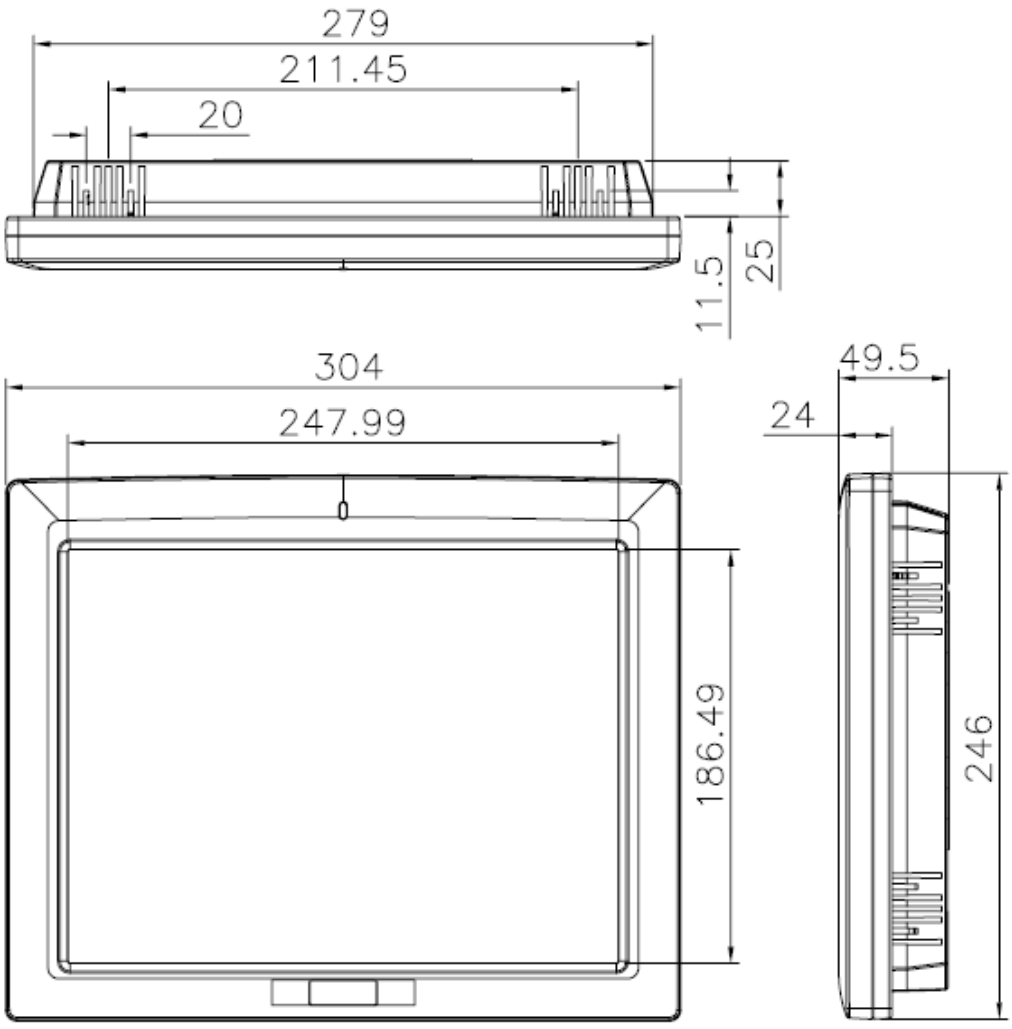


Figure 1-8: EX-9123A-LX Dimensions (units in mm)

Chapter

2

Motherboard

2.1 Introduction

The EXPERT-LX series flat screen PC contains the EXMB-LX800 motherboard. The motherboard is the heart of any computer and is responsible for transmitting, receiving and processing data as well as driving the different onboard devices. This chapter gives a brief introduction to the EXMB-LX800 motherboard.

2.2 CPU Support

The EXMB-LX800 motherboard comes with a preinstalled AMD® Geode™ LX 800 500MHz CPU.

2.2.1 AMD® Geode™ LX 800 500MHz Specifications

The specifications for the 500MHz AMD® Geode™ LX 800 are listed below

- x86/x87-compatible core
- Processor frequency up to 500 MHZ
- 64K I/64K D L1 cache and 128K L2 cache
- Split I/D cache/TLB (Translation Look-Aside Buffer)
- 64-bit DDR Memory interface up to 400MHz (LX 800), up to 333MHz (LX 700)
- Integrated FPU that supports the Intel MMX® and AMD 3DNow!™ Technology instruction sets
- 9 GB/s internal GeodeLink™ Interface Unit (GLIU)
- Security Block
  - 128-bit AES (CBC/ECB)
  - True Random Number Generator
- High-resolution CRT and TFT outputs (simultaneous operation)
  - Support for High Definition (HD) and Standard Definition (SD) standards
  - Support 1920x1440 in CRT mode and 1600x1200 in TFT mode
- VESA 1.1 and 2.0 VIP/VDA support
- 0.13 micron process
- 481-terminal PBGA (Plastic Ball Grid Array) with internal heatspreader

2.2.2 AMD® Geode™ LX 800 500MHz Power Management

The power management for the 500MHz AMD® Geode™ LX 800 is listed below:

- 1.8W Typical (3.9W TDP) @ 500MHz
- GeodeLink active hardware power management
- Hardware support for standard ACPI software power management
- I/O companion SUSP#/SUSPA# power controls
- Lower power I/O
- Wakeup on SMI/INTR

2.3 System Chipset

The EXMB-LX800 motherboardl has a preinstalled AMD® Geode™ CS5536 system chipset. The system chipset features are listed below.

- **GeodeLink™ Interface Unit**
  - 64-bit, 66MHz operation
  - PCI VSM (Virtual System Module) that makes the interface transparent to applications software and BIOS
  - Programmable routing descriptors, use and activity monitors, and SSMI (Synchronous System Management Interrupt)
- **ATA-6 Controller**
  - 100 MB/second IDE Controller in UDMA mode per the ATA-6 specification
  - 5V interface
- **Flash Interface**
  - Multiplexed with IDE interface Connects to an array of industry standard NAND Flash and/or NOR Flash
- **USB Controller**
  - 4 USB ports (two internal and two external)
  - Supports both USB 1.1 and USB 2.0
  - 3 host ports
  - 1 host/device

- **Audio Codec 97 (AC97) Controller**
  - AC97 specification v2.3 compliant interface to multiple audio codecs: Serial In, Serial Out, Sync Out, Bit Clock In
  - Legacy “PC Beep” support
- **Diverse Device**
  - 82xx Legacy Devices
  - IR Communication Port
  - System Management Bus (SMB) Controller
  - LPC (Low Pin Count) Port
  - General Purpose I/Os (GPIOs)
  - 8 Multi-Function General Purpose Timers (MFGPTs)
  - Real-Time Clock (RTC) with CMOS RAM
  - Power Management Controller
  - ACPI v2.0 compliant

2.4 Graphics Support

The Geode LX processor’s Graphics Processor is a BitBLT/vector engine that supports pattern generation, source expansion, pattern/source transparency, 256 ternary raster operations, alpha blenders to support alpha- BLTs, incorporated BLT FIFOs, a GeodeLink interface and the ability to throttle BLTs according to video timing. New features added to the Graphics Processor include:

- Command buffer interface
- Hardware accelerated rotation BLTs
- Color depth conversion
- Paletized color
- Full 8x8 color pattern buffer
- Separate base addresses for all channels
- Monochrome inversion

Table 2-1: Geode LX Graphics Features lists a complete list of Geode LX graphics features. For more details, please refer to the AMD website or the Geode LX series data book available from AMD.

Feature	AMD Geode™ LX Processor
Color Depth	8, 16, 32 bpp (A) RGB 4 and 8-bit indexed
ROPs	256 (2-src, dest and pattern)
BLT Buffers	FIFOs in Graphics Processor
BLT Splitting	Managed by hardware
Video Synchronized BLT/Vector	Throttle by VBLANK
Bresenham Lines	Yes
Patterned (stippled) Lines	Yes
Screen to Screen BLT	Yes
Screen to Screen BLT with mono expansion	Yes
Memory to Screen BLT	Yes (throttled rep movs writes)
Accelerated Text	No
Pattern Size (Mono)	8x8 pixels
Pattern Size (Color)	8x8 pixels
Monochrome Pattern	Yes (with inversion)
Dithered Pattern (4 color)	No
Color Pattern	8, 16, 32 bpp
Transparent Pattern	Monochrome
Solid Fill	Yes
Pattern Fill	Yes
Transparent Source	Monochrome
Color Key Source Transparency	Y with mask
Variable Source Stride	Yes
Variable Destination Stride	Yes
Destination Write Bursting	Yes
Selectable BLT Direction	Vertical and Horizontal
Alpha BLT	Yes (constant α, α/pix, or sep. α channel)
VGA Support	Decodes VGA Register
Pipeline Depth	Unlimited
Accelerated Rotation BLT	8, 16, 32 bpp
Color Depth Conversion	5:6:5, 1:5:5:5, 4:4:4:4, 8:8:8:8

Table 2-1: Geode LX Graphics Features

2.5 Ethernet Controller Specifications

2.5.1 Overview

The Realtek RTL8100C(L) is a highly integrated and cost-effective single-chip Fast Ethernet controller. It is enhanced with an ACPI (Advanced Configuration Power Interface) management function for PCI in order to provide efficient power management for advanced operating systems with OSPM (Operating System Directed Power Management).

The RTL8100C(L) also supports remote wake-up (including AMD Magic Packet™ and Microsoft® Wake-up frame) to increase cost-efficiency in network maintenance and management. It is an ideal solution for notebook/motherboard-embedded network designs.

2.5.2 Features

- Integrates Fast Ethernet MAC, physical chip, and transceiver onto a single chip
- 10Mbps and 100Mbps operation
- Supports 10Mbps and 100Mbps N-way auto-negotiation
- Supports 25MHz Crystal or 25MHz OSC as the internal clock source
- Complies with PC99/PC2001 standards
- Supports ACPI power management
- Provides PCI bus master data transfer
- Provides PCI memory space or I/O space mapped data transfer
- Supports PCI clock speed of 16.75MHz-40MHz
- Advanced power saving mode
- Supports Wake-on-LAN and remote wake-up (AMD Magic Packet™, Link Change, and Microsoft® Wake-up frame)
- Half/Full duplex capability
- Supports Full Duplex Flow Control (IEEE 802.3x)
- Provides interface to 93C46 EEPROM to store resource configuration and ID parameters
- Provides PCI clock run pin

- Provides LED pins for network operation status indication
- 2.5/3.3V power supply with 5V tolerant I/Os

2.6 Peripheral Device Interfaces, Connectors, and Slots

The peripheral device connectors, interfaces and slots on the Expert-LX motherboard are listed in the sections below.

2.6.1 OEM Options

Many of the peripheral device connectors listed below are not connected to any devices. These connectors are reserved for OEM customizations. For a customized option, please contact the vendor, reseller or TOPSCCC sales representative.

2.6.2 Internal Slots

The slots listed below can all be found on the Expert-LX motherboard.

- 1 x 200-pin DDR SO-DIMM socket
- 1 x CFII slot

2.6.3 Internal Peripheral Device Connectors

The peripheral device connectors listed below are located on the EXMB-LX800 motherboard and used for the EXPERT series. **Figure 2-1** shows the overview of the connectors that are used for the EXPERT series.

- 1 x Audio connector
- 1 x CompactFlash® (CF) slot
- 1 x Inverter connector
- 1 x LCD interface connector
- 1 x LED connector
- 1 x Mini PCI socket (for wireless LAN module)
- 1 x Power switch connector
- 1 x Touch screen connector

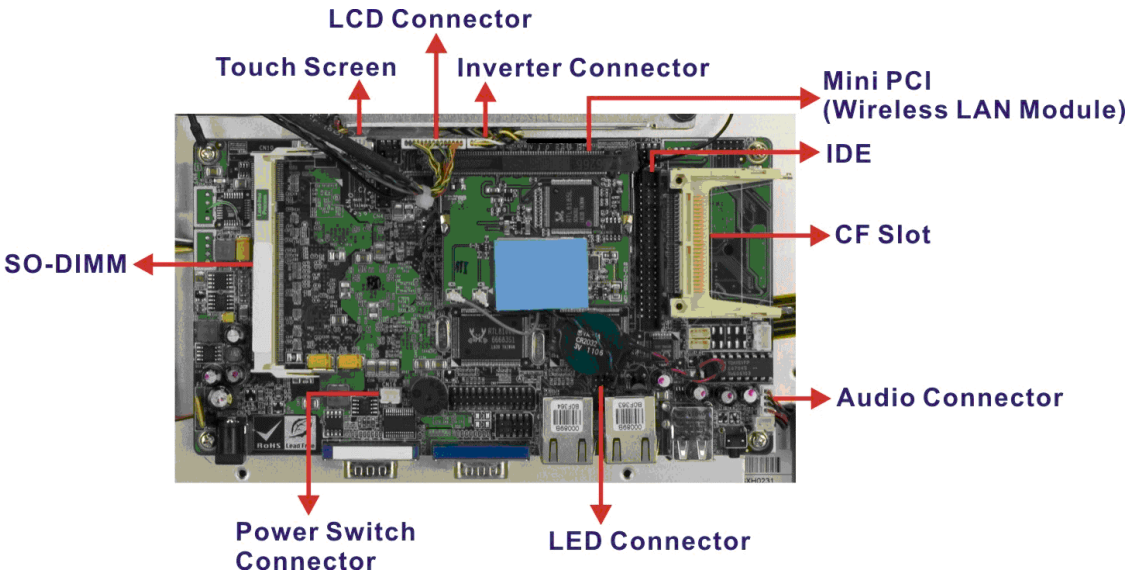


Figure 2-1: EXMB-LX800 Connector Overview

2.6.4 External Peripheral Device Connectors

The peripheral device connectors listed below are located on the rear panel of the EXMB-LX800 motherboard.

- 2 x Ethernet connectors
- 2 x USB connectors
- 2 x Serial port connectors
- 1 x Reset button
- 1 x Power connector

Chapter

3

Installation

3.1 Installation Precautions

When installing the flat panel PC, please follow the precautions listed below:

- **Power turned off**: When installing the flat panel PC, make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Certified Engineers**: Only certified engineers should install and modify onboard functionalities.
- **Mounting**: The flat panel PC is a heavy device. When mounting the system onto a rack, panel, wall or arm please make sure that at least two people are assisting with the procedure.
- **Anti-static Discharge**: If a user open the rear panel of the flat panel PC, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear and anti-static wristband.

3.2 Preinstalled Components

The following components are all preinstalled.

- Motherboard
- TFT LCD screen
- 256MB/512MB DDR memory module
- Resistive type touch screen
- Wireless LAN module
- Power switch

Preinstalled OEM customizations may include the following.

- Different DDR memory module
- Hard disk drive (EX-9123A-LX model only)

Installation of some of the components are described in **the following sections.**

3.3 Installation and Configuration Steps

The following installation steps must be followed.

Step 1: Unpack the flat panel PC

Step 2: Install CF card

Step 3: Install HDD (EX-9123A-LX model only)

Step 4: Mount the flat panel PC

Step 5: Connect peripheral devices to the bottom panel of the flat panel PC

Step 6: Configure the system

3.4 Unpacking

To unpack the flat panel PC, follow the steps below:

WARNING!

The front side LCD screen has a protective plastic cover stuck to the screen. Only remove the plastic cover after the flat panel PC has been properly installed. This ensures the screen is protected during the installation process.

Step 1: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.

Step 2: Open the external (second) box.

Step 3: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.

Step 4: Lift the monitor out of the boxes.

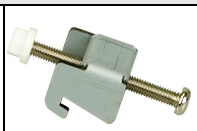
Step 5: Remove both polystyrene ends, one from each side.

Step 6: Pull the plastic cover off the flat panel PC.

Step 7: Make sure all the components listed in the packing list are present.

3.4.1 Packing List

The EXPERT-LX flat panel PC is shipped with the following components:

Quantity	Item	Image
Standard		
1	Power adapter	
1	Power cord	
1	User manual CD and driver CD	
1	Touch pen	
Optional		
4 (6)	Panel mounting clamp (EX-9123A-LX)	
1	Wall mounting kit	
1	128MB CompactFlash® card with Windows CE 5.0 pre-installed and SDK	
1	1GB CompactFlash® card with Windows XPE pre-installed	

If any of these items are missing or damaged, contact the distributor or sales representative immediately.

3.5 CF Card Installation

The EXPERT-LX series has one CF Type II slot inside the rear panel. To install the CF card, follow the instructions below.

Step 1: Remove the nine retention screws (**Figure 3-1**) and lift the cover off the flat panel PC.

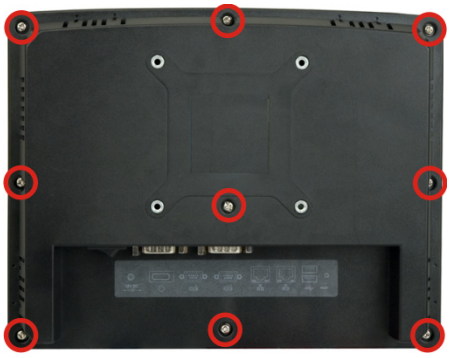


Figure 3-1: Back Cover Retention Screws

Step 2: For EX-9119A-LX, lift the cover off and pull down the cover a bit to make it possible to lift the cover further more after removing the nine retention screws (**Figure 3-2**). Push the power switch while lifting the back cover. More strength is required to separate the cover from the chassis.

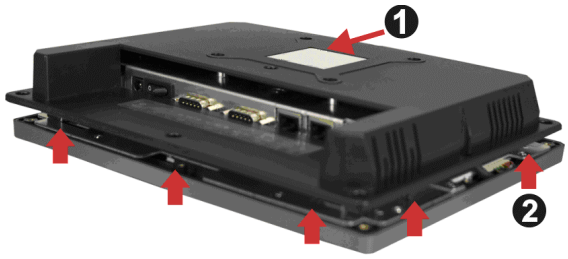


Figure 3-2: EX-9119A-LX Plastic Back Cover Removal

Step 3: Locate the CF slot. Insert a CF card into the slot (**Figure 3-3**).

Figure 3-3: CF Card Location

Step 4: Replace the plastic back cover. For EX-9119A-LX, more strength is required when pushing the bottom part of the cover down to the chassis (**Figure 3-4**).

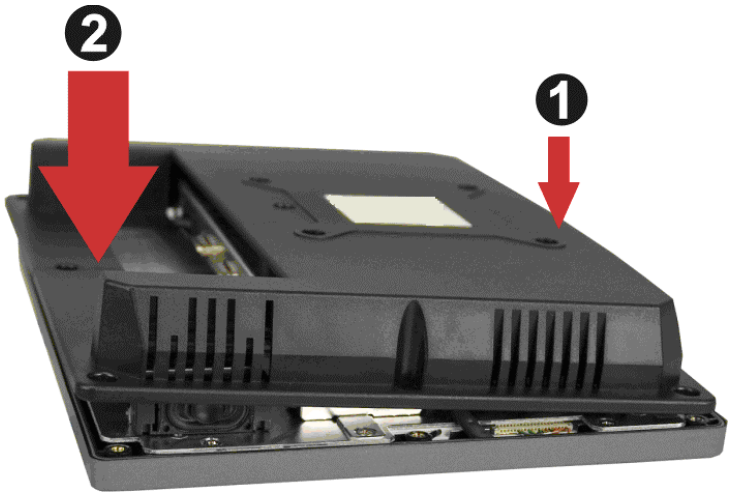


Figure 3-4: EX-9119A-LX Plastic Back Cover Replacement

Step 5: Once replaced reinsert the nine previously removed retention screws.

3.6 HDD Installation (EX-9123A-LX Only)

To install the HDD into the EX-9123A-LX, please follow the steps below:

Step 1: Remove the plastic back cover. See **Section 3.5** above.

Step 2: Remove the eight retention screws securing the internal aluminum cover (**Figure 3-5**).

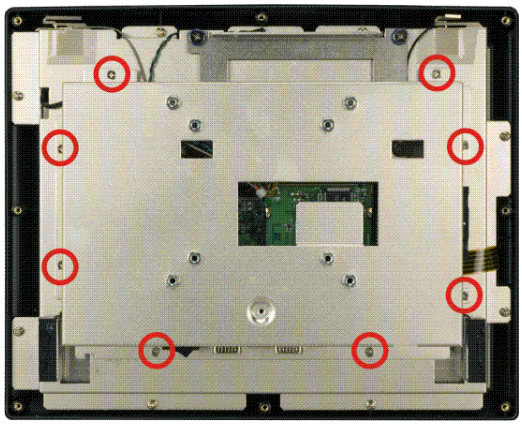


Figure 3-5: EX-9123A-LX Aluminum Back Cover Retention Screws

Step 3: Remove the four hexagonal pillars on the bottom panel.

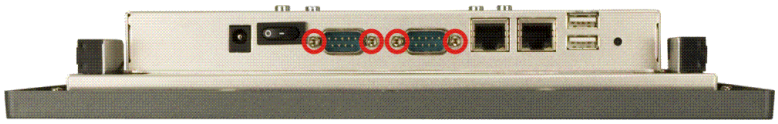


Figure 3-6: Four Hexagonal Pillars on the Bottom Panel

Step 4: Push the external interface connector apart from the aluminum cover and lift the aluminum cover off the EX-9123A-LX.

Step 5: Disconnect the power switch cable from the motherboard and remove the aluminum cover.

Step 6: Remove the four HDD bracket retention screws (**Figure 3-7**) and lift the HDD bracket off the panel PC.

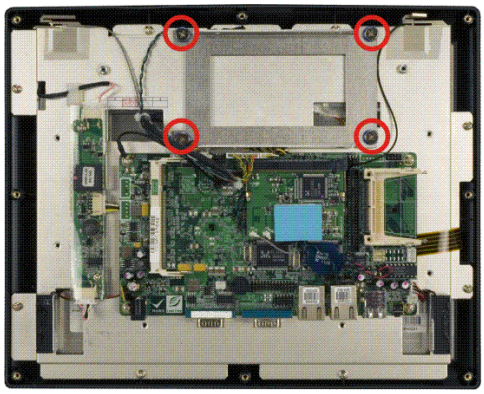


Figure 3-7: EX-9123A-LX HDD Bracket Retention Screws

Step 7: Attach the HDD brackets to the HDD. To do this, align the four retention screw holes in the both sides of the HDD bracket with the retention screw holes on the sides of the HDD. Insert four retention screws into the HDD bracket (**Figure 3-8**).

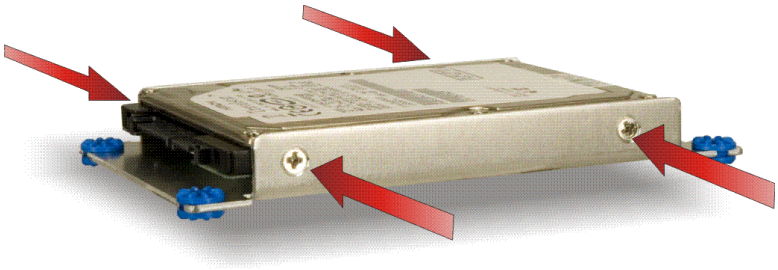


Figure 3-8: EX-9123A-LX HDD Retention Screws

Step 8: Connect the IDE cable to the rear of HDD.

Step 9: Install the HDD into the EX-9123A-LX by aligning the retention screw holes in the HDD brackets with the retention screw holes on the chassis. Insert the four retention screws.

Step 10: Re-connect the power switch cable to the motherboard.

Step 11: Replace the aluminum back cover to the chassis.

Step 12: Replace the plastic back cover.

3.7 Mounting the System

WARNING!

When mounting the flat panel PC onto an arm, onto the wall or onto a panel, it is better to have more than one person to help with the installation to make sure the panel PC does not fall down and get damaged.

The four methods of mounting the EXPERT-LX are listed below.

- Wall mounting
- Panel mounting
- Arm mounting
- Rack mounting

The four mounting methods are described below.

3.7.1 Wall Mounting

To mount the flat panel PC onto the wall, please follow the steps below.

Step 1: Select the location on the wall for the wall-mounting bracket.

Step 2: Carefully mark the locations of the four brackets screw holes on the wall.

Step 3: Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them (**Figure 3-9**).

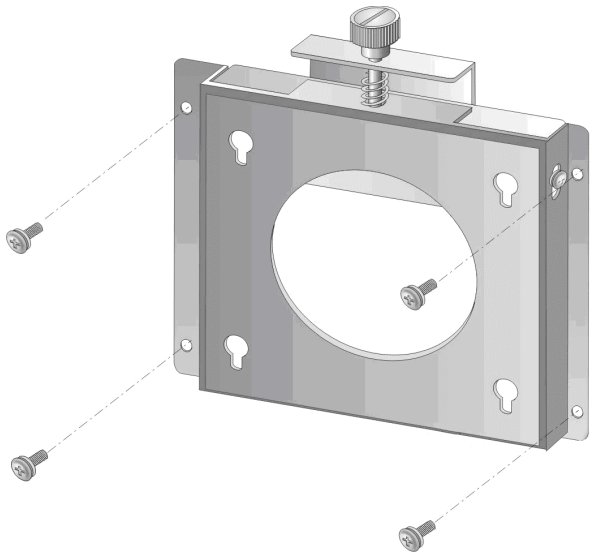


Figure 3-9: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws provided in the wall mounting kit into the four screw holes on the real panel of the flat panel PC and tighten until the screw shank is secured against the rear panel (**Figure 3-10**).

Step 7: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (**Figure 3-10**). Ensure that all four of the mounting screws fit snuggly into their respective slotted holes.

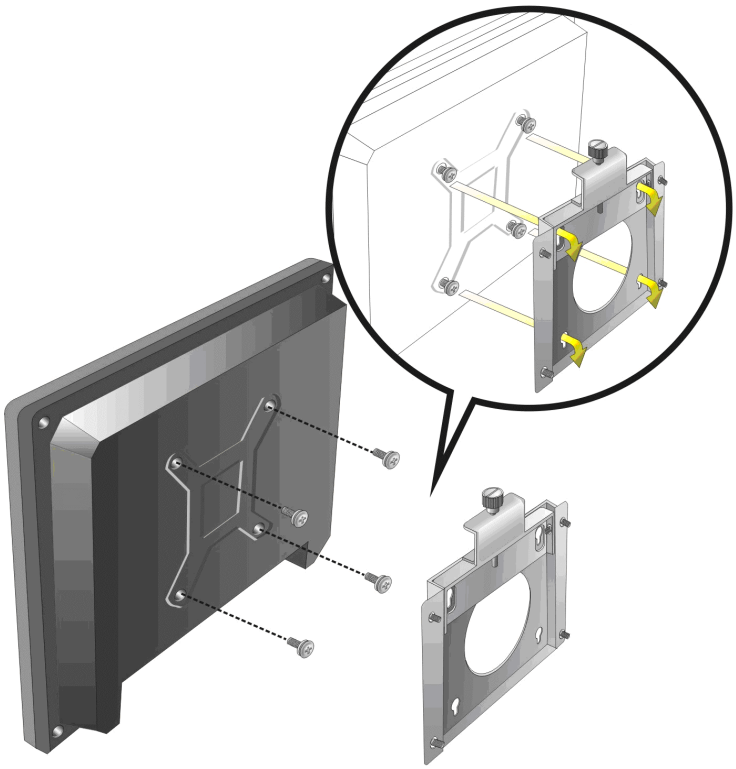


Figure 3-10: Chassis Support Screws

NOTE:

In the diagram below the bracket is already installed on the wall.

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket. (**Figure 3-11**).

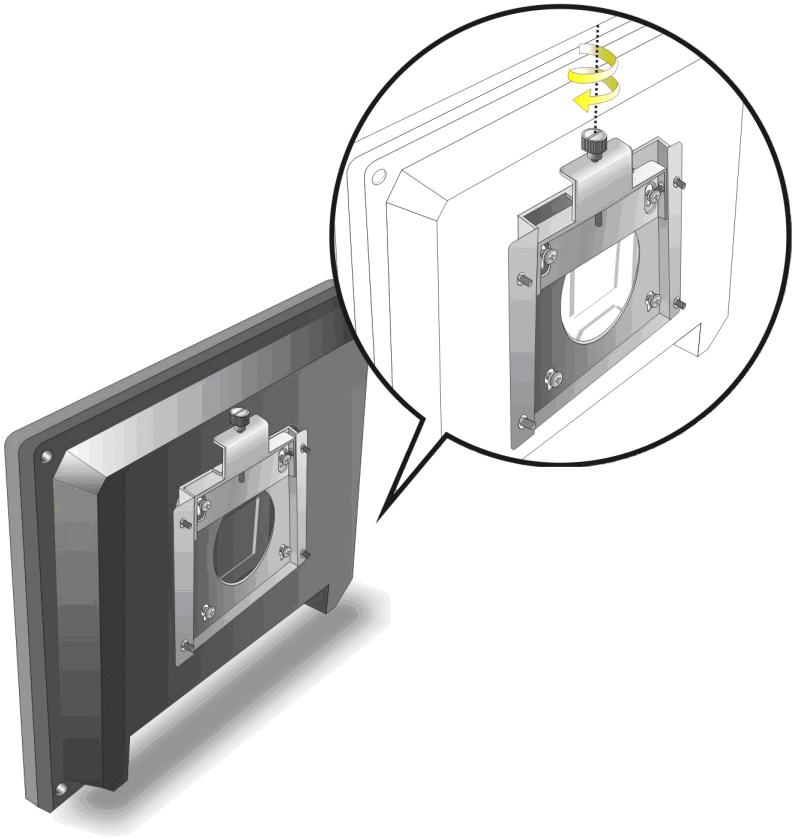


Figure 3-11: Secure the Panel PC

3.7.2 Panel Mounting

To mount the EXPERT-LX series flat panel PC into a panel, please follow the steps below.

Step 1: Select the position on the panel to mount the flat panel PC.

Step 2: Cut out a section from the panel that corresponds to the rear panel dimensions

of the flat panel PC. Take care that the panel section that is cut out is smaller than the overall size of the metal frame that surrounds the flat panel PC but just large enough for the rear panel of the flat panel PC to fit through (**Figure 3-12, Figure 3-13** and **Figure 3-14**).

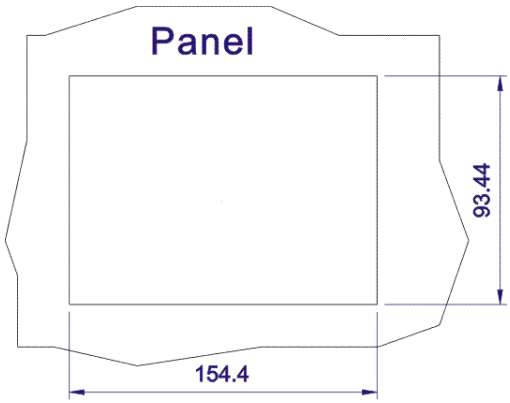


Figure 3-12: EX-9118A-LX Panel Opening

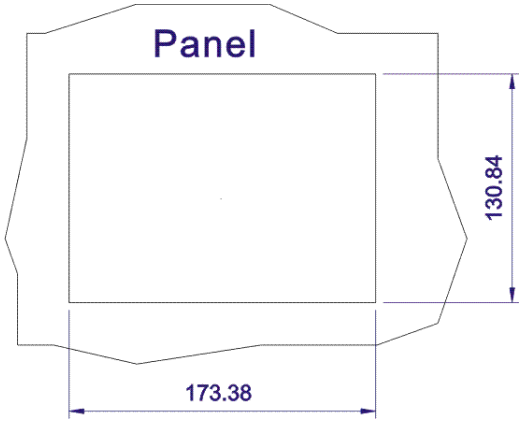


Figure 3-13: EX-9118A-LX Panel Opening

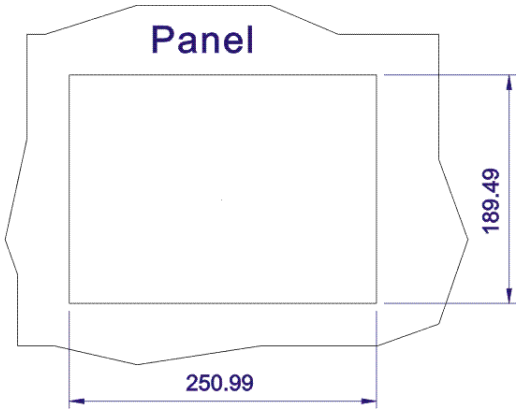


Figure 3-14: EX-9123A-LX Panel Opening

Step 3: Slide the flat panel PC through the hole until the aluminum frame is flush against the panel.

Step 4: Insert the panel mounting clamps into the pre-formed holes along the edges of the chassis, behind the aluminum frame. There are a total of 4 panel mounting clamps for EX-9118A-LX/EX-9119A-LX and 6 panel mounting clamps for EX-9123A-LX.

Step 5: Tighten the screws that pass through the panel mounting clamps until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 3-15**).

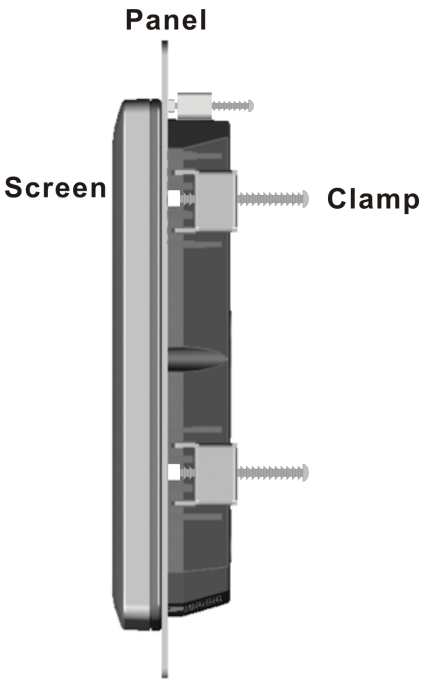


Figure 3-15: Tighten the Panel Mounting Clamp Screws (EX-9123A-LX)

3.7.3 Arm Mounting

The EXPERT-LX series is VESA (Video Electronics Standards Association) compliant and can be mounted on an arm with a 75mm interface pad. To mount the EXPERT-LX series on an arm, please follow the steps below.

Step 1: The arm is a separately purchased item. Please correctly mount the arm onto the surface it uses as a base. To do this, refer to the installation documentation that came with the mounting arm.

NOTE:

When purchasing the arm please ensure that it is VESA compliant and that the arm has a 75mm interface pad. If the mounting arm is not VESA compliant it cannot be used to support the EXPERT-LX series flat panel PC. The EX-9123A-LX also supports VESA MIS-D 100.

Step 2: Once the mounting arm has been firmly attached to the surface, lift the flat panel PC onto the interface pad of the mounting arm.

Step 3: Align the retention screw holes on the mounting arm interface with those in the flat panel PC. The EX-9118A-LX/ EX-9118A-LX arm mount retention screw holes are shown in **Figure 3-16** and the EX-9123A-LX are shown in **Figure 3-17**.

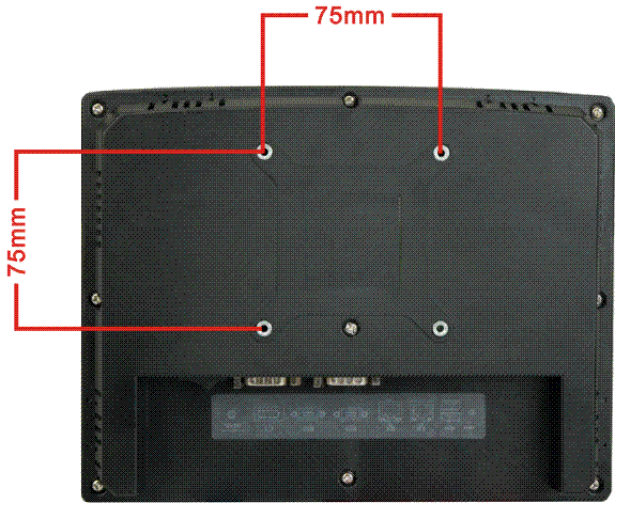


Figure 3-16: EX-9118A-LX/EX-9119A-LX Arm Mounting Retention Screw Holes

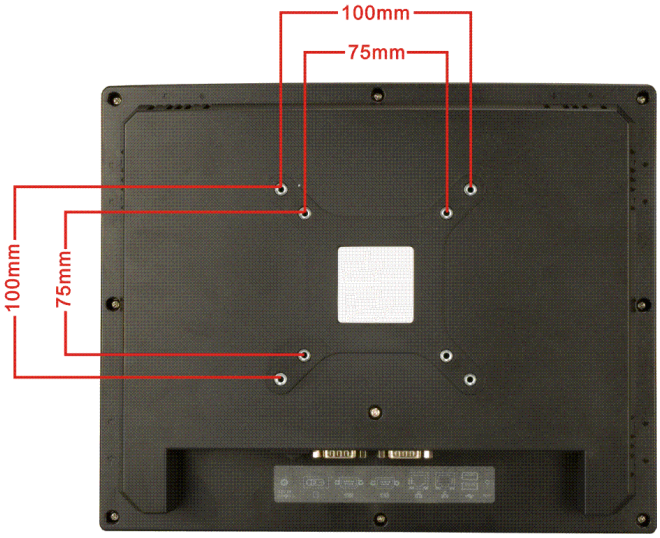


Figure 3-17: EX-9123A-LX Arm Mounting Retention Screw Holes

Step 4: Secure the flat panel PC to the interface pad by inserting four retention screws through the bottom of the mounting arm interface pad and into the flat panel PC.

3.7.4 Cabinet and Rack Installation

The EX-xxxxA-LX series flat panel PC can be installed into a cabinet or rack. The installation procedures are similar to the panel mounting installation. To do this, please follow the steps below:

NOTE:

When purchasing the cabinet/rack installation bracket, make sure it is compatible with both the EX-xxxxA-LX series flat panel PC and the rack/cabinet into which the EX-xxxxA-LX series is installed.

Step 1: Slide the rear chassis of the EX-xxxxA-LX series flat panel PC through the rack/cabinet bracket until the aluminum frame is flush against the front of the bracket (**Figure 3-18**).

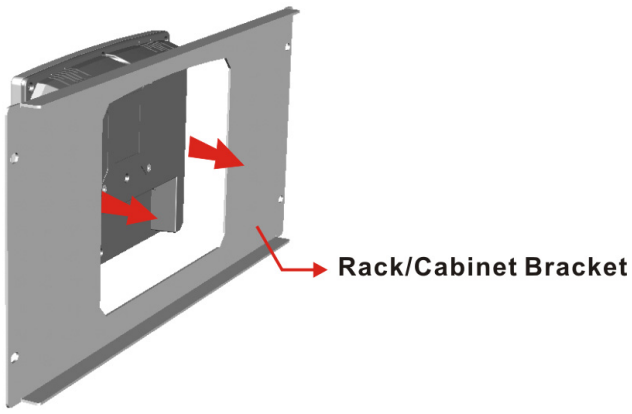


Figure 3-18: The Rack/Cabinet Bracket

Step 2: Insert the rack mounting clamps into the pre-formed holes along the edges of

the flat panel PC, behind the ABS/PC plastic frame. There are a total of 4 rack mounting clamps for EX-9118A-LX/EX-9119A-LX and 6 rack mounting clamps for EX-9123A-LX.

Step 3: Tighten the screws that pass through the rack mounting clamps until the plastic caps at the front of all the screws are firmly secured to the bracket (**Figure 3-19**).

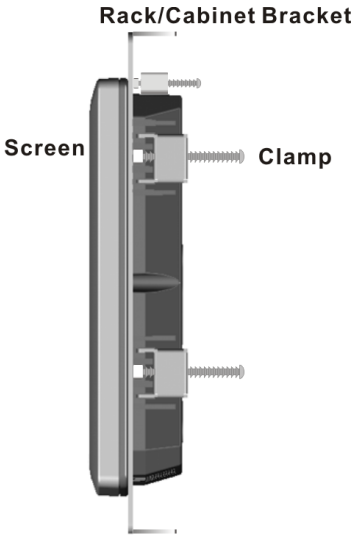


Figure 3-19: Secure the Rack/Cabinet Bracket (EX-9123A-LX)

Step 4: Slide the flat panel PC with the attached rack/cabinet bracket into a rack or cabinet (**Figure 3-20**).

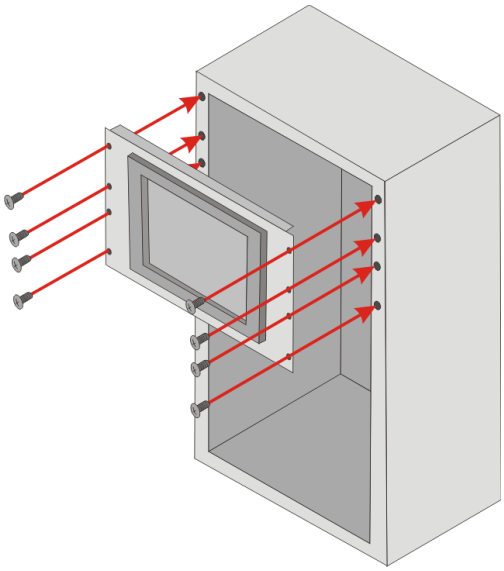


Figure 3-20: Install into a Rack/Cabinet

Step 5: Once the flat panel PC with the attached rack/cabinet bracket has been properly inserted into the rack or cabinet, secure the front of the rack/cabinet bracket to the front of the rack or cabinet (**Figure 3-20**).

3.8 Bottom Panel Connectors

3.8.1 Ethernet Connection

The two rear panel RJ-45 connectors can be connected to an external LAN and provide Internet connectivity to the flat panel PC.

3.8.2 Serial Ports

The panel PC provides two RS-232 serial ports on the bottom panel. The serial ports facilitate the connection to serial devices or a communications network, e.g., terminal console.

3.8.3 USB Connection

The rear panel USB connectors provide easier and quicker access to external USB devices. The rear panel USB connector is a standard connector and can easily be connected to other USB devices.

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Chapter

4

System Maintenance

4.1 System Maintenance Introduction

If the components of the EXPERT-LX series fail they must be replaced, such as the wireless LAN module or the motherboard. Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions and jumper settings for the EXPERT-LX series are described below.

4.2 Motherboard Replacement

A user cannot replace a motherboard. If the motherboard fails it must be shipped back to TOPSCCC to be replaced. If the system motherboard has failed, please contact the system vendor, reseller or an TOPSCCC sales person directly.

4.3 Internal Aluminum Cover Removal

WARNING!

BEFORE REMOVING THE BACK COVER, MAKE SURE THE POWER IS OFF. Failing to do so may lead to severe damage of EXPERT-LX series and injury to the body.

WARNING!

PLEASE TAKE ANTISTATIC PRECAUTIONS WHEN WORKING WITH THE INTERNAL COMPONENTS. The interior of the EXPERT-LX series contains very sensitive electronic components. These components are easily damaged by electrostatic discharge (ESD). Before working with the internal components make sure all the anti-static precautions described earlier have been observed.

To replace any of the following components,

- Motherboard
- DDR memory module
- Wireless LAN module
- Inverter

The internal aluminum back cover of the EXPERT-LX series must be removed. To remove the aluminum back cover, please follow the steps below.

4.3.1 EX-9118A-LX Internal Aluminum Cover Removal

Step 1: Remove the four retention screws securing the internal aluminum cover (**Figure 4-1**).

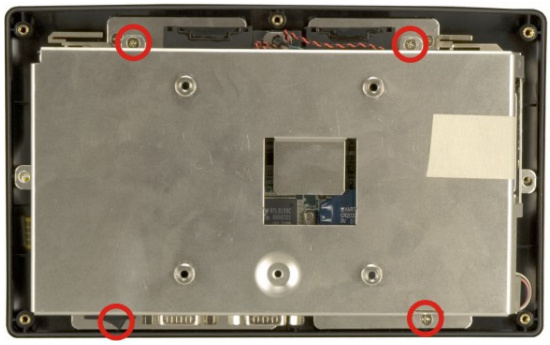


Figure 4-1: EX-9118A-LX Aluminum Back Cover Retention Screws

Step 2: Remove the four hexagonal pillars on the bottom panel (**Figure 4-2**).

Figure 4-2: Four Hexagonal Pillars on the Bottom Panel (EX-9118A-LX)

Step 3: Push the external interface connector apart from the aluminum cover and lift the aluminum cover off the EX-9118A-LX.

Step 4: Disconnect the power switch cable from the motherboard and remove the aluminum cover.

4.3.2 EX-9119A-LX Internal Aluminum Cover Removal

Step 1: Remove the four retention screws (**Figure 4-3**).

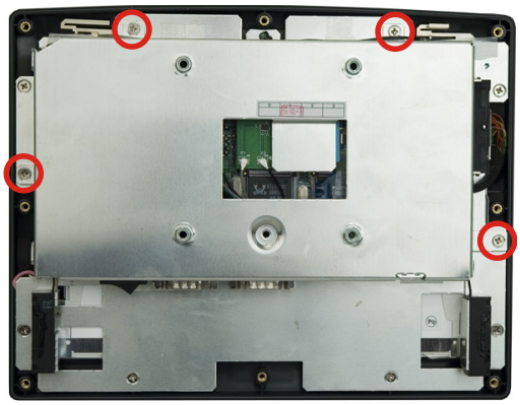


Figure 4-3: EX-9119A-LX Aluminum Back Cover Retention Screws

Step 2: Remove the four hexagonal pillars on the bottom panel (**Figure 4-4**).

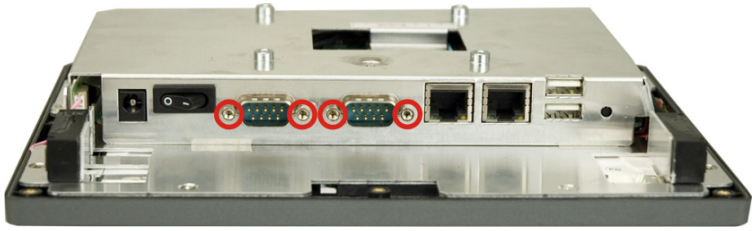


Figure 4-4: Four Hexagonal Pillars on the Bottom Panel (EX-9119A-LX)

Step 3: Detach the tapes securing the wireless module cables on the chassis (**Figure 4-5**).

Step 4: Carefully cross the wireless module cables over the screw holes of the aluminum cover (**Figure 4-5**).

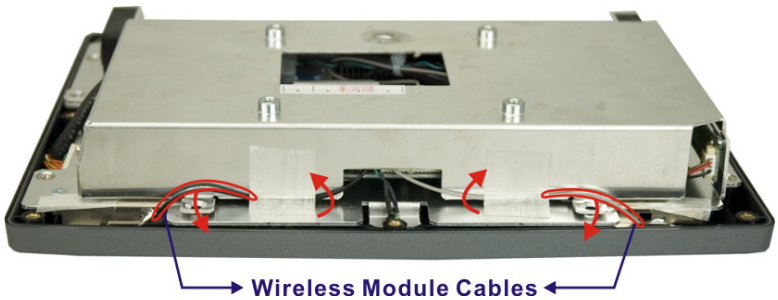


Figure 4-5: Wireless Module Cables

Step 5: Push the external interface connector apart from the aluminum cover and lift the cover (**Figure 4-6**).

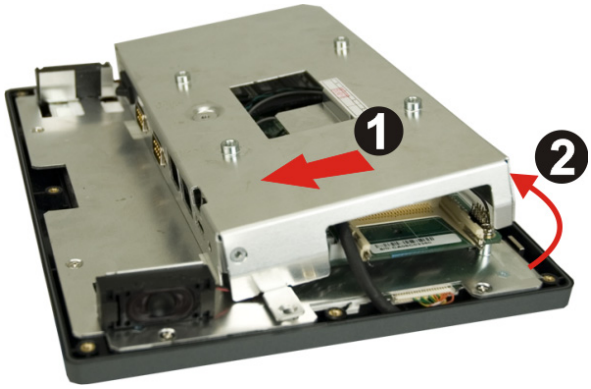


Figure 4-6: The Internal Aluminum Cover Removal

Step 6: Disconnect the power switch cable (**Figure 4-7**) from the motherboard and remove the aluminum cover.

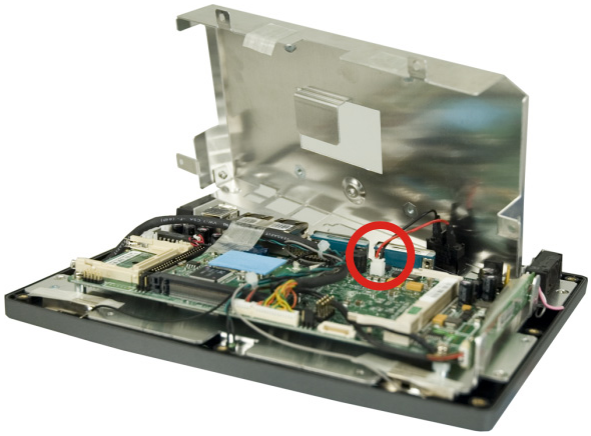


Figure 4-7: Power Switch Cable

4.3.3 EX-9123A-LX Internal Aluminum Cover Removal

Step 1: Remove the eight retention screws securing the internal aluminum cover (**Figure 4-8**).

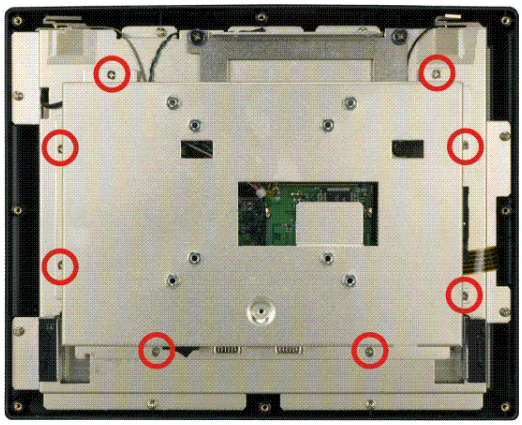


Figure 4-8: EX-9123A-LX Aluminum Back Cover Retention Screws

Step 2: Remove the four hexagonal pillars on the bottom panel (**Figure 4-9**).

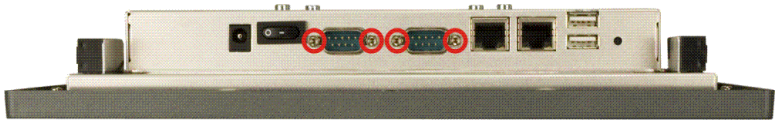


Figure 4-9: Four Hexagonal Pillars on the Bottom Panel (EX-9123A-LX)

Step 3: Push the external interface connector apart from the aluminum cover and lift the aluminum cover off the EX-9123A-LX.

Step 4: Disconnect the power switch cable from the motherboard and remove the aluminum cover.

4.4 Memory Module Replacement

The flat panel PC is preinstalled with a 256MB/512MB DDR memory module. If the memory module is fail, follow the instructions below to replace the memory module.

Step 1: Remove the back cover. See **Section 3.5** above.

Step 2: Remove the internal aluminum back cover. See **Section 4.3** above.

Step 3: Locate the DDR memory module on the motherboard of the flat panel PC (**Figure 4-10**).

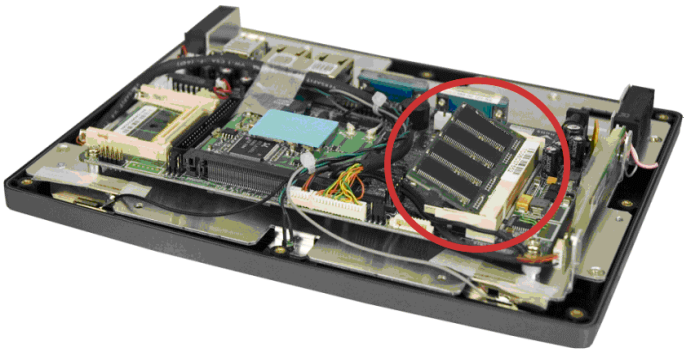


Figure 4-10: SO-DIMM Socket Location

Step 4: Remove the DDR memory module by pulling both the spring retainer clips outward from the socket.

Step 5: Grasp the DDR memory module by the edges and carefully pull it out of the socket.

Step 6: Install the new DDR memory module by pushing it into the socket at an angle (**Figure 4-11**).

Step 7: Gently pull the spring retainer clips of the SO-DIMM socket out and push the rear of the DDR memory module down (**Figure 4-11**).

Step 8: Release the spring retainer clips on the SO-DIMM socket. They clip into place and secure the DDR memory module in the socket.

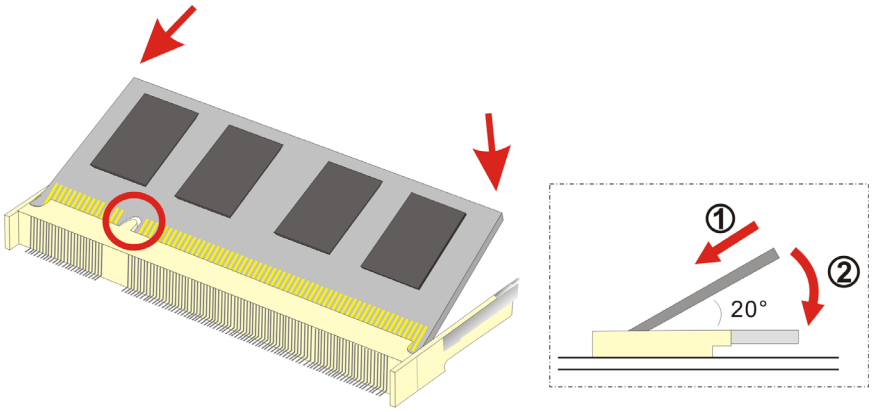
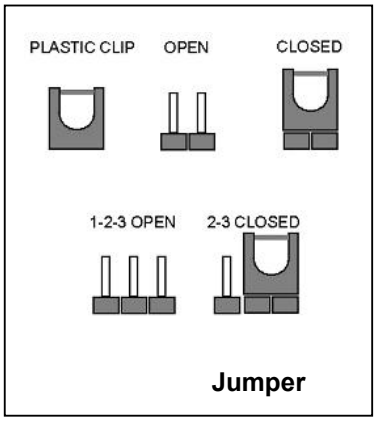


Figure 4-11: DDR SO-DIMM Module Installation

4.5 Jumper Settings

NOTE:

A jumper is a metal bridge that is used to close an electrical circuit. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To CLOSE/SHORT a jumper means connecting the pins of the jumper with the plastic clip and to OPEN a jumper means removing the plastic clip from a jumper.



The motherboard comes with two jumpers. They are listed below.

- COM3 pin-9 signal select (JP3)
- COM1 and COM2 pin-9 signal select (JP4)

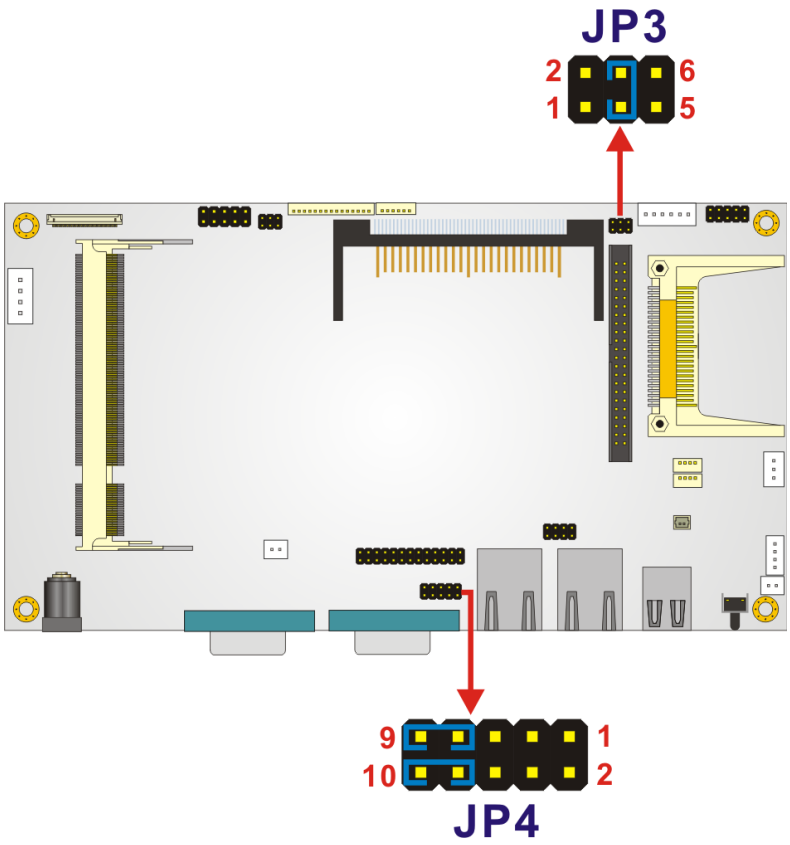


Figure 4-12: Jumper Locations

4.5.1 JP3: COM3 Pin-9 Signal Select Jumper Settings

The COM3 pin-9 signal can be selected as 12V, 5V or Ring.

JP3	Description	
Short 1-2	COM3 pin-9 is 12V output	
Short 3-4	COM3 pin-9 is RI input	Default
Short 5-6	COM3 pin-9 is 5V output	

Table 4-1: COM3 Pin-9 Signal Select Jumper Settings

4.5.2 JP4: COM1 and COM2 Pin-9 Signal Select Jumper Settings

The COM1 and COM2 pin-9 signal can be selected as 12V, 5V or Ring.

JP4	Description	
Short 1, 3	COM1 pin-9 is 12V output	
Short 3, 5	COM1 pin-9 is 5V output	
Short 5, 7	COM1 pin-9 is 5V output	
Short 7, 9	COM1 pin-9 is RI input	Default
Short 2, 4	COM2 pin-9 is 12V output	
Short 4, 6	COM2 pin-9 is 5V output	
Short 6, 8	COM2 pin-9 is 5V output	
Short 8, 10	COM2 pin-9 is RI input	Default

Table 4-2: COM1 and COM2 Pin-9 Signal Select Jumper Settings

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Chapter

4

Award BIOS Setup

5.1 Introduction

A licensed copy of Phoenix Award BIOS is preprogrammed into the ROM BIOS. The BIOS setup program allows users to modify the basic system configuration. This chapter describes how to access the BIOS setup program and the configuration options that may be changed.

5.1.1 Starting Setup

The Phoenix Award BIOS is activated when the computer is turned on. The setup program can be activated in one of two ways.

1. Press the **DELETE** key as soon as the system is turned on or
2. Press the **DELETE** key when the "**Press Del to enter SETUP**" message appears on the screen.

If the message disappears, restart the computer and try again.

5.1.2 Using Setup

Use the arrow keys to highlight items, press **ENTER** to select, use the **PAGEUP** and **PAGEDOWN** keys to change entries, press **F1** for help and press **ESC** to quit. Navigation keys are shown below.

Key	Function
Up arrow	Move to the item above
Down arrow	Move to the item below
Left arrow	Move to the item on the left hand side
Right arrow	Move to the item on the right hand side
+/Page up	Increase the numeric value or make changes
-/Page down	Decrease the numeric value or make changes
Esc	Main Menu – Quit and do not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu

F2	Item help
F5	Previous values for the page menu items
F6	Fail-safe defaults for the current page menu items
F7	Optimized defaults for the current page menu items
F9	Menu in BIOS
F10	Save changes and Exit BIOS

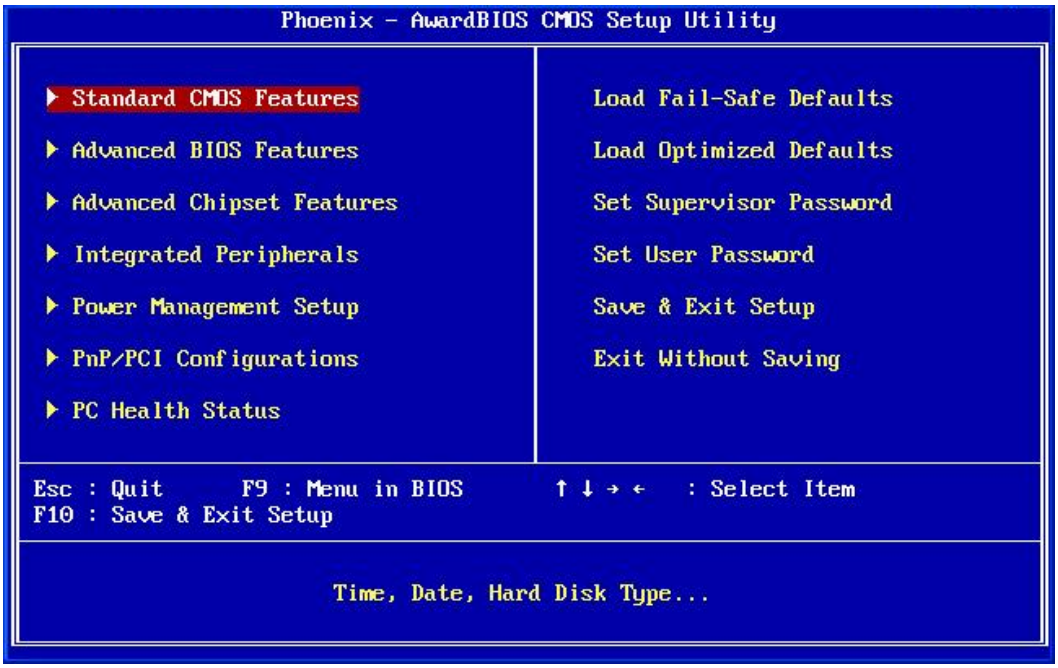
Table 5-1: BIOS Navigation Keys

5.1.3 Getting Help

When **F1** is pressed a small help window describing the appropriate keys to use and the possible selections for the highlighted item appears. To exit the Help Window press **Esc** or the **F1** key again.

5.1.4 Main BIOS Menu

Once the BIOS opens, the main menu (**BIOS Menu 1**) appears.



BIOS Menu 1: Award BIOS CMOS Setup Utility

NOTE:

The following sections will completely describe the menus listed below and the configuration options available to users.

The following menu options are seen in **BIOS Menu 1**.

- **Standard CMOS Features**: Changes the basic system configuration.
- **Advanced BIOS Features**: Changes the advanced system settings.
- **Advanced Chipset Features**: Changes the chipset configuration features.
- **Integrated Peripherals**: Changes the settings for integrated peripherals.
- **Power Management Setup**: Configures power saving options.
- **PnP/PCI Configurations**: Changes the advanced PCI/PnP settings.
- **PC Health Status**: Monitors essential system parameters.

The following user configurable options are also available in **BIOS Menu 1**:

➔ **Load Fail-Safe Defaults**

Use the **Load Fail-Safe Defaults** option to load failsafe default values for each BIOS parameter in the setup menus. Press **F6** for this operation on any page.

➔ **Load Optimized Defaults**

Use the **Load Optimized Defaults** option to load optimal default values for each BIOS parameter in the setup menus. Press **F7** for this operation on any page.

➔ **Set Supervisor Password**

Use the **Set Supervisor Password** option to set the supervisor password. By default, no supervisor password is set. To install a supervisor password, select this field and enter the password. After this option is selected, a red dialogue box appears with "**Enter Password:** ". Type the password and press **ENTER**. Retype the original password into the "**Confirm Password:** " dialogue box and press **ENTER**. To disable the password, simply

press **ENTER** in the "**Enter Password:** " dialogue box, then press any key in the "**Password Disabled !!!**" dialogue box.

➔ **Set User Password**

Use the **Set User Password** option to set the user password. By default no user password is set. To install a user password, select this field and enter the password. After this option is selected, a red dialogue box appears with "**Enter Password:** ". Type the password and press **ENTER**. Retype the original password into the "**Confirm Password:** " dialogue box and press **ENTER**. To disable the password, simply press **ENTER** in the "**Enter Password:** " dialogue box, then press any key in the "**Password Disabled !!!**" dialogue box.

➔ **Save & Exit Setup**

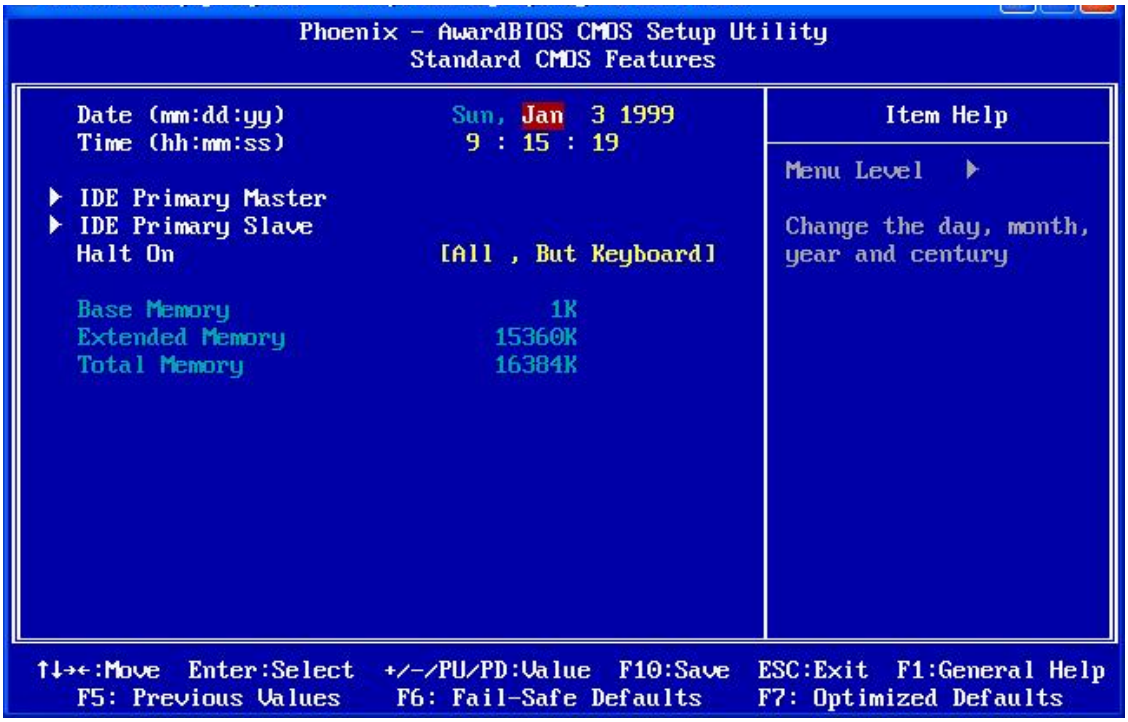
Use the **Save & Exit Setup** option to save any configuration changes made and exit the BIOS menus.

➔ **Exit Without Saving**

Use the **Exit Without Saving** option to exit the BIOS menus without saving any configuration changes.

5.2 Standard CMOS Features

Use the Standard CMOS Features BIOS menu (**BIOS Menu 2**) to set basic BIOS configuration options.



BIOS Menu 2: Standard CMOS Features

➔ **Date [Day mm:dd:yyyy]**

Use the **Date** option to set the system date.

➔ **Time [hh/mm/ss]**

Use the **Time** option to set the system time.

➔ **IDE Master and IDE Slave**

When entering setup, BIOS auto detects the presence of IDE devices. The **Standard CMOS Features** menu shows the status of the auto detected IDE devices. The following IDE devices are detected and shown in the **Standard CMOS Features** menu:

- IDE Primary Master
- IDE Primary Slave

IDE device configurations are changed or set in the IDE Configuration menu. If an IDE device is detected, and one of the above listed two BIOS configuration options is selected, the IDE configuration options shown in **Section 5.2.1** appear.

➔ **Halt On [All, But Keyboard]**

Use the **Halt On** option to specify what errors detected during the power up process stop the system.

➔ **All Errors**		Whenever BIOS detects a non-fatal error the system is stopped and the user prompted.
➔ **No Errors**		The system boot is not stopped for any errors that may be detected.
➔ **All, But Keyboard**	(Default)	The system boot does not stop for a keyboard error; it stops for all other errors.

➔ **Base Memory:**

The **Base Memory** is NOT user configurable. The POST determines the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed, or 640K for systems with 640K or more memory installed.

➔ **Extended Memory**

The **Extended Memory** is NOT user configurable. The BIOS determines how much extended memory is present during the POST. This is the amount of memory above 1MB located in the memory address map of the CPU.

➔ **Total Memory**

The **Total Memory** is NOT user configurable.

5.2.1 IDE Primary Master/Slave

Use the IDE Primary Master/Slave menu to set or change the master/slave IDE configurations.

➔ **IDE HDD Auto-Detection [Press Enter]**

Use the **IDE HDD Auto-Detection** option to enable BIOS to automatically detect the IDE settings. Select **IDE HDD Auto-Detection** and press **ENTER.** BIOS automatically detects the HDD type. Do not set this option manually.

➔ **IDE Primary Master [Auto]**

Use the **IDE Primary Master** option to activate or deactivate the following drive channels:

- Channel 0 Master
- Channel 0 Slave
- Channel 1 Master
- Channel 1 Slave

➔ **None**		If no drives are connected to the IDE channel select this option. Once set, this IDE channel becomes inaccessible and any drives attached to it are undetected.
➔ **Auto**	(Default)	Setting this option allows the device to be automatically detected by the BIOS.
➔ **Manual**		Selecting this option allows manual configuration of the device on the IDE channel in BIOS.

➔ **Access Mode [Auto]**

The **Access Mode** option can only be configured if the BIOS configuration option is set to either **Manual** or **Auto**. Use the **Access Mode** option to determine the hard disk BIOS

translation modes. Most systems now use hard drives with large capacities and therefore either the LBA translation mode or auto mode should be selected.

➔	**CHS**		Select this mode if the HDD capacity is less than 504MB.
➔	**LBA**		Select this mode if the HDD capacity is more than 8.4GB.
➔	**Large**		This mode is an extended ECHS mode and while it supports HDDs larger than 504MB, it is not recommended.
➔	**Auto**	(Default)	If you are unsure of what access mode to set, select this option.

➔ **Capacity**

The **Capacity** specification indicates the storage capacity of the HDD installed in the system.

➔ **Cylinder**

The **Cylinder** specification indicates how many cylinders (tracks) are on the HDD installed in the system.

➔ **Head**

The **Head** specification indicates how many logical heads are on the HDD installed in the system.

➔ **Precomp**

The **Precomp** specification indicates on what track the write precompensation begins.

➔ **Landing Zone**

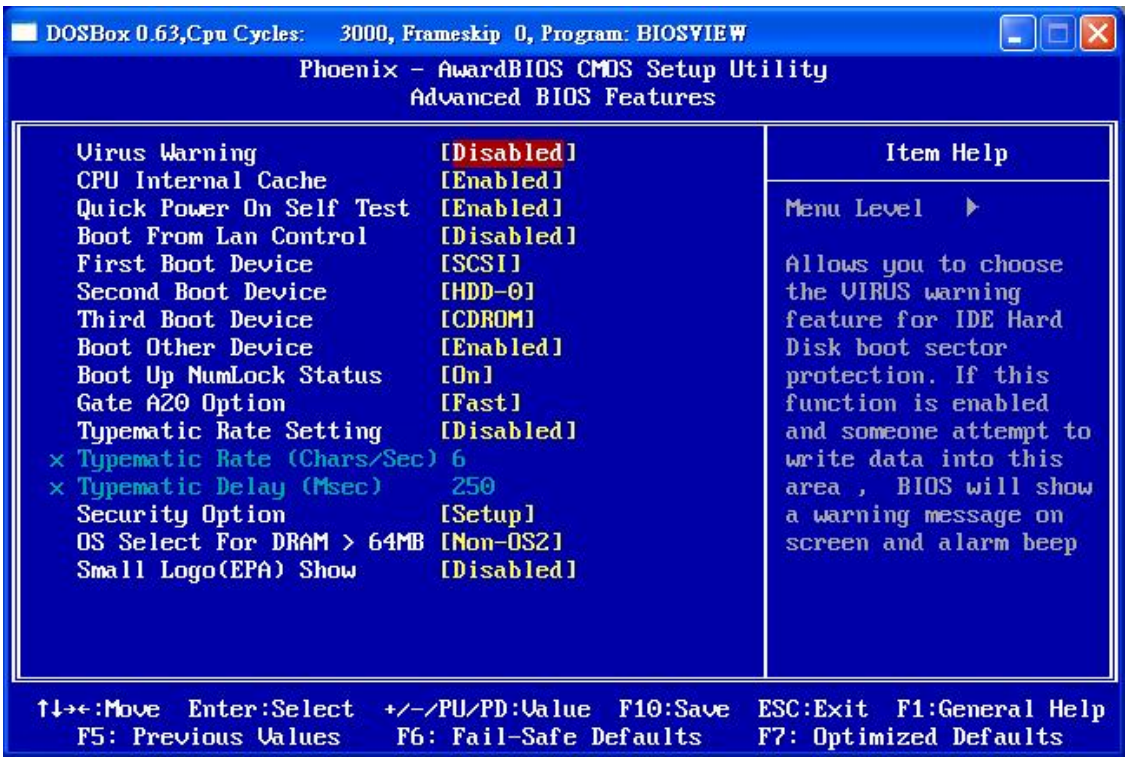
The **Landing Zone** specification indicates where the disk head will park itself after the system powers off.

➔ **Sector**

The **Sector** specification indicates how many logical sectors the HDD has been divided into.

5.3 Advanced BIOS Features

Use the **Advanced BIOS Features** menu (**BIOS Menu 3**) to configure the CPU and peripheral device configuration options.



BIOS Menu 3: Advanced BIOS Features

➔ **Virus Warning [Disabled]**

NOTE:

Many disk diagnostic programs can cause the above warning message to appear when the program attempts to access the boot sector table. If you are running such a program, it is recommended that the virus protection function be disabled beforehand.

Use the **Virus Warning** option to enable BIOS to monitor the boot sector and partition table of the HDD for any attempted modification. If a modification attempt is made, the BIOS halts the system and an error message appears. If necessary, an anti-virus program can then be run to locate and remove the virus before any damage is done.

➔ **Enabled** Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or HDD partition table.

➔ **Disabled** (Default) No warning message appears when there is an attempt to access the boot sector or HDD partition table.

➔ **CPU Internal Cache [Enabled]**

Use the **CPU Internal Cache** option to enable or disable the internal CPU cache.

➔ **Disabled** The internal CPU cache is disabled.

➔ **Enabled** (Default) The internal CPU cache is enabled.

➔ **Quick Power On Self Test [Enabled]**

Use the **Quick Power On Self Test** option to speed up the POST after the computer is turned on. If enabled, BIOS shortens or skips some POST check items.

➔ Disabled Normal POST occurs after the computer is turned on.

➔ Enabled (Default) Quick POST occurs after the computer is turned on.

➔ **Boot From LAN Control [Disabled]**

Use the **BOOT From LAN Control** option to enable the system to be booted from a remote system.

➔ **Disabled** (Default) The system cannot be booted from a remote system through the LAN.

➔ **Enabled** The system can be booted from a remote system through the LAN.

➔ **Boot Device**

Use the **Boot Device** options to select the order of the devices the system boots from. There are three boot device configuration options:

- **First Boot Device** [Default: SCSI]
- **Second Boot Device** [Default: HDD-0]
- **Third Boot Device** [Default: CDROM]

Using the default values, the system first looks for a SCSI drive to boot from. If it cannot find a SCSI drive, it boots from a HDD. If both The SCSI drive and the HDD are unavailable, the system boots from a CD-ROM.

Boot Device configuration options are:

- LS120
- HDD-0
- SCSI
- CDROM
- HDD-1
- USB-FDD

- USB-ZIP
- USB-CDROM
- USB-HDD
- LAN
- Disabled

➔ **Boot Other Device [Enabled]**

Use the **Boot Other Device** option to determine whether the system uses a second or third boot device if the first boot device is not found.

➔ **Disabled**		The system does not look for second and third boot devices if the first one is not found.
➔ **Enabled**	(Default)	The system looks for second and third boot devices if the first one is not found.

➔ **Boot Up Numlock Status [On]**

Use the **Boot Up Numlock Status** option to specify the default state of the numeric keypad.

➔ **Off**		The keys on the keypad are not activated.
➔ **On**	(Default)	Activates the keys on the keypad.

➔ **Gate A20 Option [Fast]**

Use the **Gate A20 Option** to set if the keyboard controller or the chipset controls the Gate A20 switching.

➔ **Normal**		The keyboard controller does the switching.
➔ **Fast**	(Default)	The chipset does the switching.

➔ **Typematic Rate Setting [Disabled]**

Use the **Typematic Rate Setting** configuration option to specify if only one character is allowed to appear on the screen if a key is continuously held down. When this option is enabled, the BIOS reports as before, but it then waits a moment, and, if the key is still held down, it begins to report that the key has been pressed repeatedly. This feature accelerates cursor movement with the arrow keys.

➔ **Disabled**	(Default)	Disables the typematic rate.
➔ **Enabled**		Enables the typematic rate.

➔ **Typematic Rate (Chars/sec) [6]**

The **Typematic Rate** option can only be configured if the **Typematic Rate Setting** is enabled. Use the **Typematic Rate** option to specify the rate keys are accelerated.

➔ **6**	(Default)	6 characters per second
➔ **8**		8 characters per second
➔ **10**		10 characters per second
➔ **12**		12 characters per second
➔ **15**		15 characters per second
➔ **20**		20 characters per second
➔ **24**		24 characters per second
➔ **30**		30 characters per second

➔ **Typematic Delay (Msec) [250]**

The **Typematic Rate** option can only be configured if the **Typematic Rate Setting** is enabled. Use the **Typematic Delay** option to specify the delay time between when a key is first pressed and when the acceleration begins.

- ➔ **250** (Default) 250 milliseconds
- ➔ **500** 500 milliseconds
- ➔ **750** 750 milliseconds
- ➔ **1000** 1000 milliseconds

➔ **Security Option [Setup]**

Use the **Security Option** to limit access to both the system and Setup, or just Setup.

- ➔ **Setup** (Default) The system does not boot and access to Setup is denied if the correct password is not entered at the prompt.
- ➔ **System** The system boots, but access to Setup is denied if the correct password is not entered at the prompt.

NOTE:

To disable security, select the password setting in the Main Menu. When asked to enter a password, don't type anything, press **ENTER** and the security is disabled. Once the security is disabled, the system boots and Setup can be accessed.

➔ **OS Select For DRAM > 64MB [Non-OS2]**

Use the **OS Select For DRAM > 64MB** option to specify the operating system.

- ➔ **Non-OS2** (Default) Select this option when not using the OS/2 operating system.
- ➔ **OS2** Specifies the operating system used as OS/2.

➔ **Small Logo (EPA) Show [Disabled]**

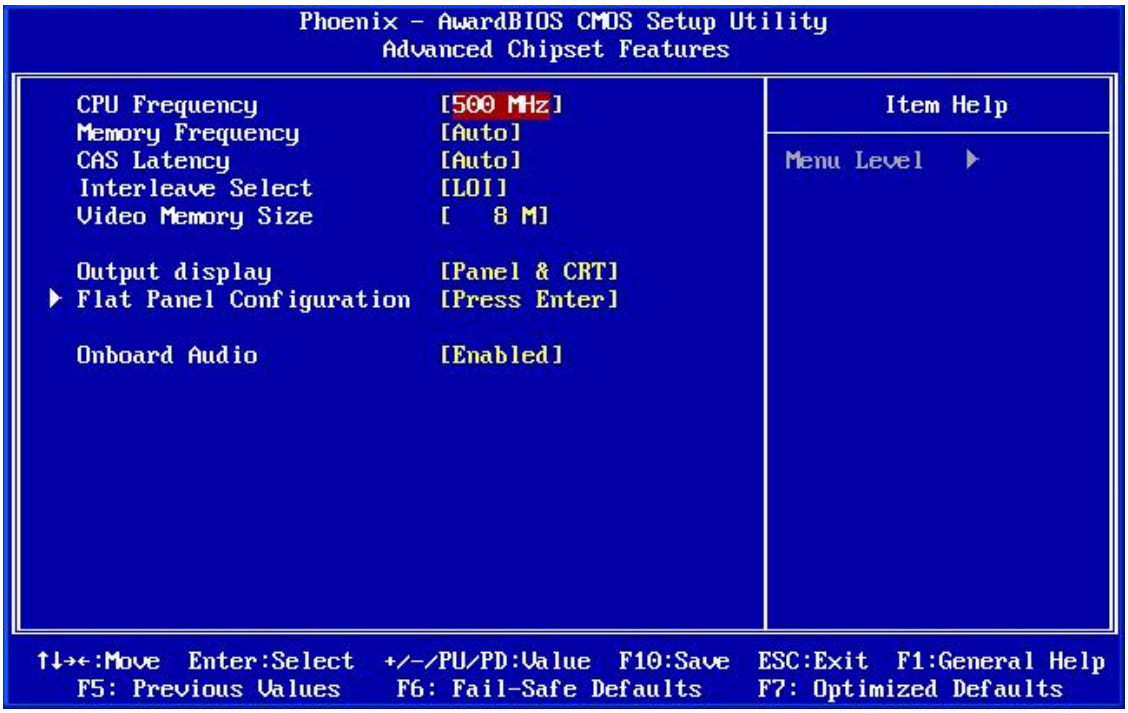
Use the **Small Logo (EPA) Show** option to specify if the Environmental Protection Agency (EPA) logo appears during the system boot-up process. If enabled, the boot up process may be delayed.

➔ **Disabled** (Default) EPA logo does not appear during boot up.

➔ **Enabled** EPA logo appears during boot up.

5.4 Advanced Chipset Features

Use the Advanced Chipset Features menu (**BIOS Menu 4**) to change chipset configuration options.



BIOS Menu 4: Advanced Chipset Features

➔ **CPU Frequency [500MHz]**

Use the **CPU Frequency** option to set the CPU frequency. The **CPU Frequency** options are:

- Auto
- 200MHz
- 333MHz
- 400MHz
- 433MHz
- 500MHz (Default)

➔ **Memory Frequency [Auto]**

Use the **Memory Frequency** option to set the frequency of the installed DRAM modules. The **Memory Frequency** options are:

- Auto (Default)
- 100MHz
- 133MHz
- 166MHz
- 200MHz

➔ **CAS Latency [Auto]**

Use the **CAS Latency Time** option to set the Column Address Strobe (CAS) delay time. The **CAS Latency Time** options are:

- Auto (Default)
- 1.5 nanoseconds
- 2.0 nanoseconds
- 2.5 nanoseconds
- 3.0 nanoseconds
- 3.5 nanoseconds

➔ **Interleave Select [LOI]**

Use the **Interleave Select** option to specify how the cache memory is interleaved.

➔ **LOI** (Default) Low order interleaving (LOI) of memory occurs.

➔ **HOI** High order interleaving (HOI) of memory occurs.

➔ **Video Memory Size [8M]**

Use the **Video Memory Size** option to determine how much memory is allocated to the video graphics device. The **Video Memory Size** options are:

- None
- 8M (Default)
- 16M
- 32M
- 64M
- 128M
- 254M

➔ **Output Display [Panel & CRT]**

Use the **Output Display** configuration to specify the display devices the system is connected to. The **Output Display** options are:

- Flat Panel
- CRT
- Panel & CRT (Default)

➔ **Flat Panel Configuration [Press Enter]**

Use the Flat Panel Configuration option to open the Flat Panel Configuration menu. The Flat Panel Configuration options are shown in **Section 5.4.1**.

➔ **OnBoard Audio [Enabled]**

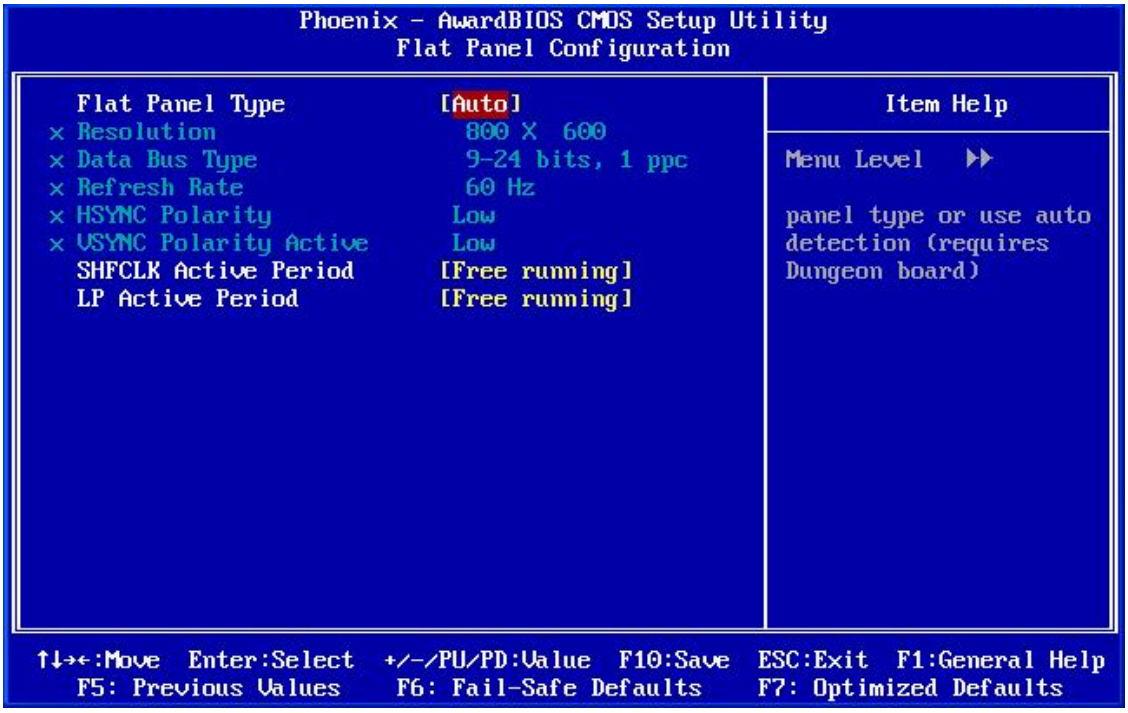
Use the **OnBoard Audio** option to enable or disable the onboard codec.

➔ **Disabled** The onboard codec is disabled.

➔ **Enabled** (Default) The onboard codec is detected and enabled.

5.4.1 Flat Panel Configuration

Use the **Flat Panel Configuration** menu (**BIOS Menu 5**) to set the configuration settings for the flat panel screen connected to the system.



BIOS Menu 5: Flat Panel Configuration

➔ **Flat Panel Type [Auto]**

Use the **Flat Panel Type** option to specify the type of flat panel screen connected to the system.

➔ **TFT** Specifies the system is connected to a TFT display.

➔ **LVDS** Specifies the system is connected to an LVDS display.

➔ **Auto** (Default) The system detects the display type and the display

settings.

➔ **Resolution [800 x 600]**

The **Resolution** option can only be configured if the **Flat Panel Type** option is not set to **Auto**. Use the **Resolution** option to set the resolution of the flat panel screen connected to the system. The **Resolution** options are:

- 320 x 240
- 640 x 480
- 800 x 600 (Default)
- 1024 x 768
- 1152 x 864
- 1280 x 1024
- 1600 x 1200

➔ **Data Bus Type [9 – 24 bits, 1 ppc]**

The **Data Bus Type** option can only be configured if the **Flat Panel Type** option is not set to **Auto**. Use the **Data Bus Type** option to set the bus type and the data bus width used to transfer data between the system and the flat panel screen connected to the system. The **Data Bus Type** options are:

- 9-24 bits, 1 ppc (Default)
- 18, 24 bits, 2 ppc

➔ **Refresh Rate [60Hz]**

The **Refresh Rate** option can only be configured if the **Flat Panel Type** option is not set to **Auto**. Use the **Refresh Rate** option to set the screen refresh rate required by the panel connected to the system. Check the documentation that came with the panel before setting this option. The **Refresh Rate** options are:

- 60Hz (Default)
- 70Hz
- 72Hz

- 75Hz
- 85Hz
- 90Hz
- 100Hz

➔ **HSYNC Polarity [Low]**

The **HSYNC Polarity** option can only be configured if the **Flat Panel Type** option is not set to **Auto**. Use the **HSYNC Polarity** option to set the polarity of the HSYNC signal to the panel. The **HSYNC Polarity** options are:

- High
- Low (Default)

➔ **VSYNC Polarity Active [Low]**

The **VGSYNC Polarity Active** option can only be configured if the **Flat Panel Type** option is not set to **Auto**. Use the **VGSYNC Polarity Active** option to set the polarity of the VSYNC signal to the panel. The **VGSYNC Polarity Active** options are:

- High
- Low (Default)

➔ **SHFCLK Active Period [Free Running]**

Use the **SHFCLK Active Period** option to set the SHFCLK. The **SHFCLK Active Period** options are:

- Active Only
- Free running (Default)

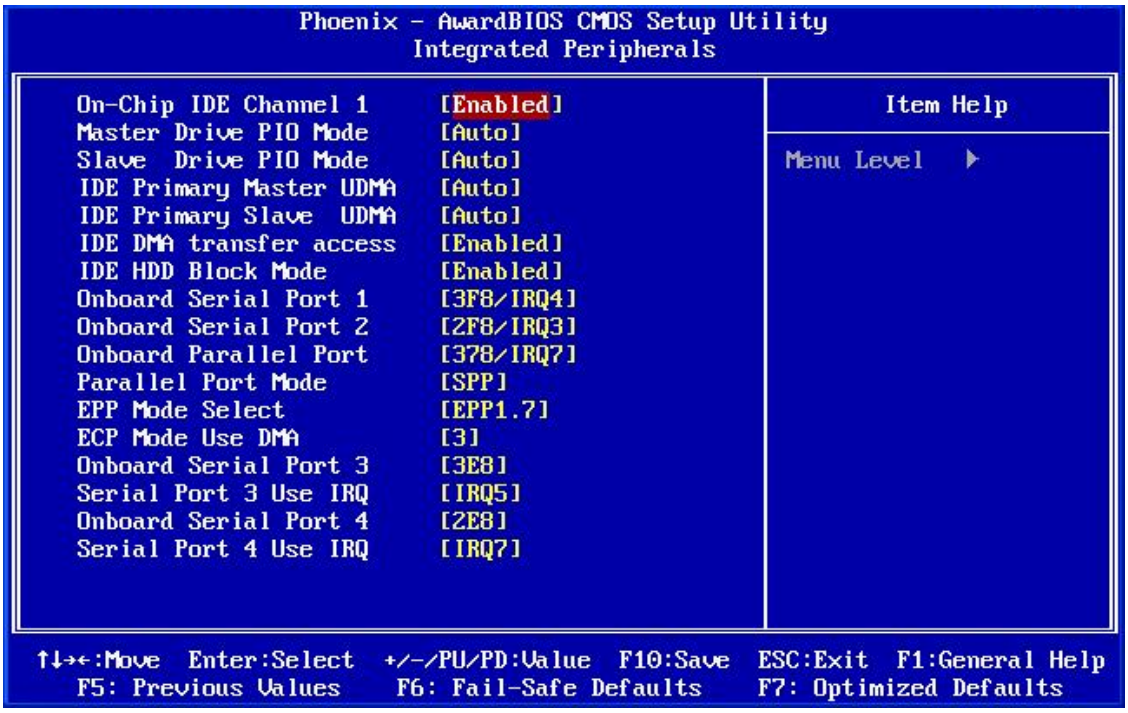
➔ **LP Active Period [Free Running]**

Use the **LP Active Period** option to set the LDE/MOD signal to the panel. The **LP Active Period** options are:

- Active Only
- Free running (Default)

5.5 Integrated Peripherals

Use the Integrated Peripherals menu (**BIOS Menu 6**) to change the configuration options for the attached peripheral devices.



BIOS Menu 6: Integrated Peripherals

➔ **On-Chip IDE Channel 1 [Enabled]**

Use the **On-Chip IDE Channel 1** option to specify if the system uses the integrated primary IDE channel or not.

➔ **Disabled** The primary IDE channel is not used.

➔ **Enabled** (Default) The primary IDE channel is used.

➔ **Drive PIO Mode [Auto]**

Use the **Drive PIO Mode** options below to select the Programmed Input/Output (PIO) mode for the following HDDs:

- Master Drive PIO Mode
- Slave Drive PIO Mode

➔ **Auto** (Default) The computer selects the correct mode.

➔ **Mode 0** PIO mode 0 selected with a maximum transfer rate of 3.3MBps.

➔ **Mode 1** PIO mode 1 selected with a maximum transfer rate of 5.2MBps.

➔ **Mode 2** PIO mode 2 selected with a maximum transfer rate of 8.3MBps.

➔ **Mode 3** PIO mode 3 selected with a maximum transfer rate of 11.1MBps.

➔ **Mode 4** PIO mode 4 selected with a maximum transfer rate of 16.6MBps.

➔ **IDE UDMA [Auto]**

Use the **IDE UDMA** option below to select the Ultra DMA (UDMA) mode for the following HDDs:

- IDE Primary Master UDMA
- IDE Primary Slave UDMA

➔ **Disabled** The UDMA for the HDD device is disabled.

➔ **Auto** (Default) The computer selects the correct UDMA.

➔ **IDE DMA transfer access [Enabled]**

Use the **IDE DMA transfer access** option to enable or disable DMA support for IDE devices connected to the system.

➔ **Disabled** All IDE drive DMA transfers are disabled. The IDE drives use PIO mode transfers.

➔ **Enabled** (Default) All IDE drive DMA transfers are enabled.

➔ **IDE HDD Block Mode [Enabled]**

If the drive connected to the system supports block mode, use the **IDE HDD Block Mode** option to enable the system to detect the optimal number of block read/writes per sector the system IDE drive can support. Block mode is also called block transfer, multiple commands, or multiple sector read/write.

➔ **Disabled**		Block mode is not supported.
➔ **Enabled**	(Default)	Block mode is supported.

➔ **Onboard Serial Port 1 [3F8/IRQ4]**

Use the **Onboard Serial Port 1** option to select the I/O address and IRQ for the onboard serial port 1. The serial port can be disabled or the I/O address and the IRQ can be automatically selected by the BIOS. The **Onboard Serial Port 1** options are:

- Disabled
- 3F8/IRQ4 (Default)
- 2F8/IRQ3
- 3E8/IRQ4
- 2E8/IRQ3
- Auto

➔ **Onboard Serial Port 2 [2F8/IRQ3]**

Use the **Onboard Serial Port 2** option to select the I/O address and IRQ for the onboard serial port 2. The serial port can be disabled or the I/O address and the IRQ can be automatically selected by the BIOS. The **Onboard Serial Port 2** options are:

- Disabled
- 3F8/IRQ4
- 2F8/IRQ3 (Default)
- 3E8/IRQ4
- 2E8/IRQ3
- Auto

➔ **Onboard Parallel Port [378/IRQ7]**

Use the **Onboard Parallel Port** option to specify a logical LPT port address and corresponding interrupt for the physical parallel port. The **Onboard Parallel Port** options are:

- Disabled
- 378/IRQ7 (Default)
- 278/IRQ5
- 3BC/IRQ7

➔ **Parallel Port Mode [SPP]**

Use the **Parallel Port Mode** option to select parallel port operation mode.

➔ **SPP** (Default) The parallel port operates in the standard parallel port (SPP) mode. This parallel port mode works with most parallel port devices but is slow.

➔ **EPP** The parallel port operates in the enhanced parallel port mode (EPP). The EPP mode supports bi-directional communication between the system and the parallel port device and the transmission rates between the two are much faster than the SPP mode.

➔ **ECP** The parallel port operates in the extended capabilities port (ECP) mode. The ECP mode supports bi-directional communication between the system and the parallel port device and the transmission rates between the two are much faster than the SPP mode.

➔ **ECP+EPP** The parallel port is compatible with both ECP and EPP devices.

➔ **Normal**

➔ **EPP Mode Select [EPP1.7]**

The **EPP Mode Select** option is only available if the **Parallel Port Mode** option is set to EPP mode. Use the **EPP Mode Select** option to select the parallel port mode standard for the parallel port.

➔ **EPP1.9**		EPP 1.9 is selected as the EPP standard.
➔ **EPP1.7**	(Default)	EPP 1.7 is selected as the EPP standard.

➔ **ECP Mode Use DMA [3]**

The **ECP Mode Use DMA** option is only available if the **Parallel Port Mode** option is set to ECP mode. Use the **ECP Mode Use DMA** option to specify the DMA channel the parallel port must use in the ECP mode.

➔ **1**		The parallel port uses DMA Channel 1 in ECP mode.
➔ **3**	(Default)	The parallel port uses DMA Channel 3 in ECP mode.

➔ **Onboard Serial Port 3 [3E8]**

Use the **Onboard Serial Port 3** option to select the I/O address for the onboard serial port 3. The serial port can be disabled or the I/O address can be automatically selected by the BIOS. The **Onboard Serial Port 3** options are:

- Disabled
- 3F8
- 2F8
- 3E8 (Default)
- 2E8

➔ **Serial Port 3 Use IRQ [IRQ5]**

Use the **Serial Port 3 Use IRQ** option to select the IRQ for the onboard serial port 3. The serial port can be disabled or the IRQ can be automatically selected by the BIOS. The **Serial Port 3 Use IRQ** options are:

- Disabled
- IRQ5 (Default)
- IRQ7

➔ **Onboard Serial Port 4 [2E8]**

Use the **Onboard Serial Port 4** option to select the I/O address for the onboard serial port 4. The serial port can be disabled or the I/O address can be automatically selected by the BIOS. The **Onboard Serial Port 4** options are:

- Disabled
- 3F8
- 2F8
- 3E8
- 2E8 (Default)

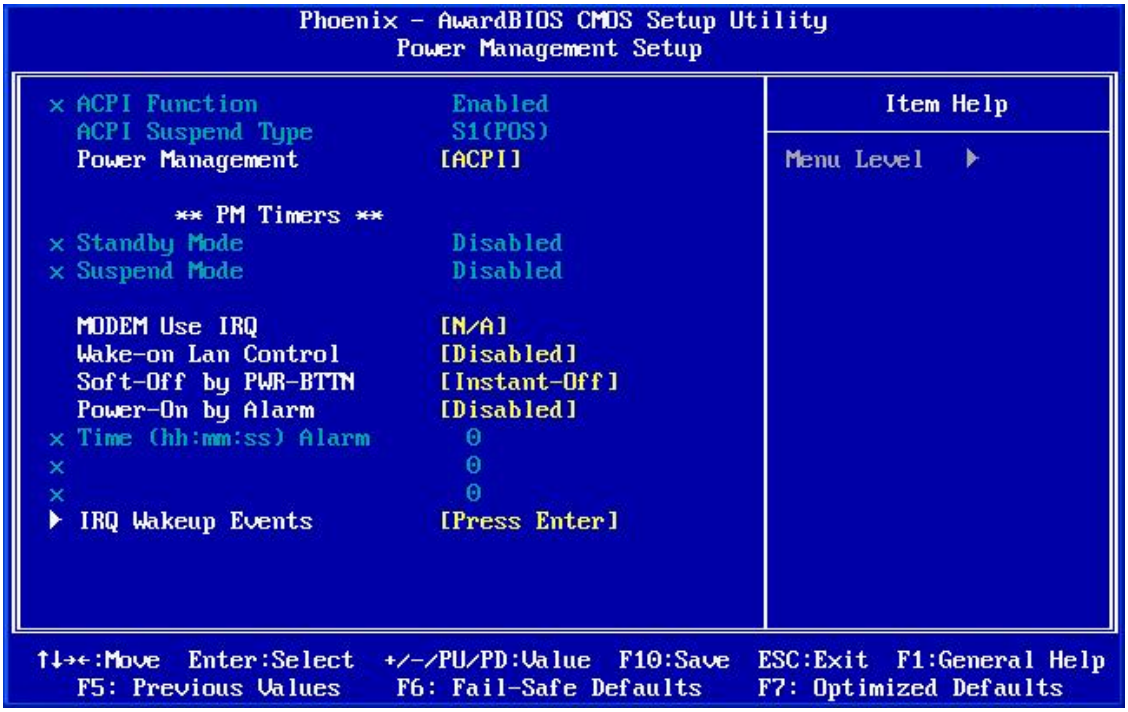
➔ **Serial Port 4 Use IRQ [IRQ7]**

Use the **Serial Port 4 Use IRQ** option to select the IRQ for the onboard serial port 4. The serial port can be disabled or the IRQ can be automatically selected by the BIOS. The **Serial Port 4 Use IRQ** options are:

- IRQ5
- IRQ7 (Default)

5.6 Power Management Setup

Use the **Power Management Setup** menu (**BIOS Menu 7**) to set the BIOS power management and saving features.



BIOS Menu 7: Power Management Setup

➔ **ACPI Function [Enabled]**

Use the **ACPI Function** to enable the ACPI (Advanced Configuration and Power Interface) function.

Disabled		ACPI function disabled.
Enabled	(Default)	ACPI function enabled.

➔ **ACPI Suspend Type [S1(POS)]**

Use the **ACPI Suspend Type** BIOS option to specify the sleep state the system enters when not being used.

- ➔ **S1 (POS)** (Default) System appears off. The CPU is stopped; RAM is refreshed; the system is running in a low power mode.
- ➔ **S3 (STR)** System appears off. The CPU has no power; RAM is in slow refresh; the power supply is in a reduced power mode.
- ➔ **S1 & S3** Both suspend modes are implemented

➔ **Power Management [ACPI]**

Use the **Power Management** option to set the power management type used by the system.

- ➔ **Disabled** All power management options are turned off. The only user configurable options are the power button and alarm settings.
- ➔ **Legacy** Standby and suspend modes can be set.
- ➔ **APM** Advanced power management (APM) is activated
- ➔ **ACPI** (Default) Advanced Configuration and Power Interface (ACPI) is activated.

➔ **x Standby Mode [Disabled]**

The **Standby Mode** option can only be selected if the **Power Management** option is set to Legacy. The **Standby Mode** specifies the amount of time the system can be inactive before the system enters standby mode. The **Standby Mode** options are:

- Disabled (Default)
- 1 Sec
- 5 Sec
- 10 Sec
- 15 Sec
- 30 Sec
- 45 Sec
- 1 Min
- 5 Min
- 10 Min
- 15 Min
- 30 Min
- 45 Min
- 60 Min
- 90 Min
- 120 Min

➔ **x Suspend Mode [Disabled]**

The **Suspend Mode** option can only be selected if the **Power Management** option is set to Legacy. The **Suspend Mode** specifies the amount of time the system can be inactive before the system enters suspend mode. The **Suspend Mode** options are:

- Disabled (Default)
- 1 Sec
- 5 Sec
- 10 Sec
- 15 Sec
- 30 Sec
- 45 Sec
- 1 Min
- 5 Min
- 10 Min
- 15 Min
- 30 Min

- 45 Min
- 60 Min
- 90 Min
- 120 Min

➔ **Modem Use of IRQ**

Use **the Modem Use of IRQ** to select the IRQ address for the system modem. The following IRQ addresses are available.

- N/A
- 3 (Default)
- 4
- 5
- 7
- 9
- 10
- 11

➔ **Wake-on Lan Control [Disabled]**

Use the **Wake-on Lan Control** option to enable activity on the LAN to rouse the system from a suspend or doze state.

➔ **Disabled** (Default) Wake event not generated by LAN activity.

➔ **Enabled** Wake event generated by LAN activity.

➔ **Soft-Off by PWR-BTTN [Instant-Off]**

Use the **Soft-Off by PWR-BTTN** option to enabled the system to enter a very low-power-usage state when the power button is pressed.

➔ **Instant-Off** (Default) When the power button is pressed, the system is immediately shutdown.

➔ **Delay 4-sec** To shutdown the system the power button must be held

down longer than four seconds otherwise the system enters a low power usage state.

➔ **Power-On by Alarm [Disabled]**

Use the **Power-On by Alarm** option to specify when the computer is roused from a suspended state.

➔ **Disabled** (Default) The real time clock (RTC) cannot generate a wake event

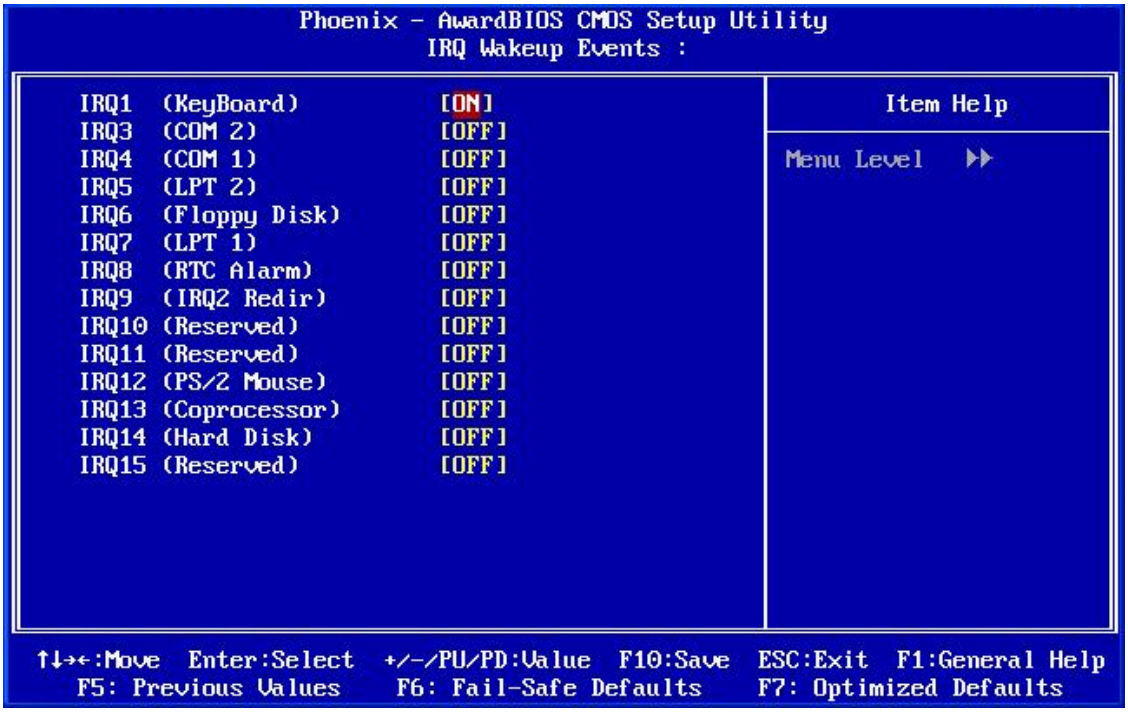
➔ **Enabled** If selected, the following appears with values that can be selected:

➔ **Time (hh:mm:ss) Alarm**

After setting the alarm, the computer will turn itself on from a suspend state when the alarm goes off.

➔ **IRQ Wakeup Events [Press Enter]**

To view the **IRQ Wakeup Events** options press **ENTER**.



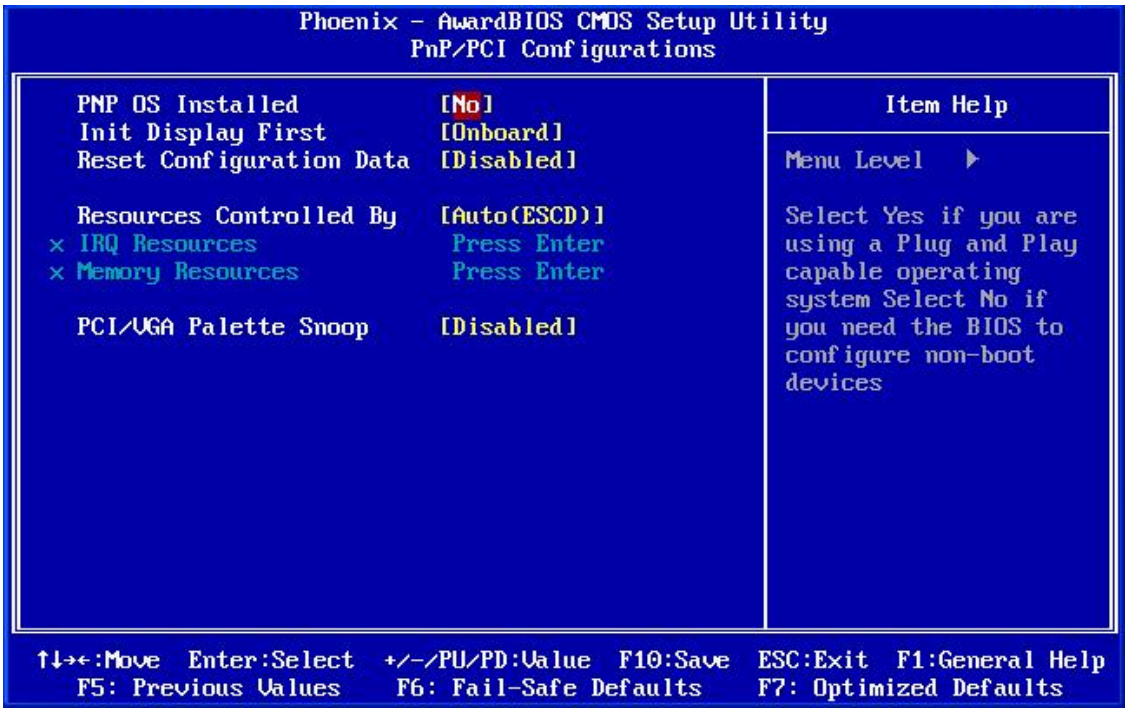
BIOS Menu 8: IRQ Wakeup Events

The following IRQs can be used to generate wake events:

- IRQ1 (KeyBoard) ON
- IRQ3 (COM 2) OFF
- IRQ4 (COM 1) OFF
- IRQ5 (LPT 2) OFF
- IRQ6 (Floppy Disk) OFF
- IRQ7 (LPT 1) OFF
- IRQ8 (RTC Alarm) OFF
- IRQ9 (IRQ2 Redir) OFF
- IRQ10 (Reserved) OFF
- IRQ11 (Reserved) OFF
- IRQ12 (PS/2 Mouse) OFF
- IRQ13 (Coprocessor) OFF
- IRQ14 (Hard Disk) OFF
- IRQ15 (Reserved) OFF

5.7 PnP/PCI Configurations

Use the PnP/PCI Configurations menu (**BIOS Menu 9**) to set the plug and play, and PCI options.



BIOS Menu 9: PnP/PCI Configurations

➔ **PNP OS Installed [No]**

The **PNP OS Installed** option determines whether the Plug and Play devices connected to the system are configured by the operating system or the BIOS.

➔ **No** (Default) If the operating system does not meet the Plug and Play specifications, BIOS configures all the devices in the system.

➔ **Yes** Set this option if the system is running Plug and Play aware operating systems. The operating system changes the interrupt, I/O, and DMA settings.

➔ **Init Display First [Onboard]**

Use the **Init Display First** option to select the primary display device.

➔ **PCI Slot**		The display connected to the PCI slot is the primary display.
➔ **Onboard**	(Default)	The display connected to the onboard connector is the primary display.

➔ **Reset Configuration Data [Disabled]**

Use the **Reset Configuration Data** option to reset the Extended System Configuration Data (ESCD) when exiting setup if booting problems occur after a new add-on is installed.

➔ **Disabled**	(Default)	ESCD will not be reconfigured
➔ **Enabled**		ESCD will be reconfigured after you exit setup

➔ **Resources Controlled By [Auto (ESCD)]**

Use the **Resources Controlled By** option to either manually configure all the boot and plug and play devices, or allow BIOS to configure these devices automatically. If BIOS is allowed to configure the devices automatically IRQs, DMA and memory base address fields cannot be set manually.

➔ **Auto(ESCD)**	(Default)	BIOS automatically configures plug and play devices as well as boot devices.
➔ **Manual**		Manually configure the plug and play devices and any other boot devices.

➔ **x IRQ Resources [Press Enter]**

The **IRQ Resources** option can only be selected if the Resources Controlled By option is set to Manual.

The **IRQ Resources** menu has the following options:

- IRQ-3 assigned to
- IRQ-4 assigned to
- IRQ-10 assigned to
- IRQ-11 assigned to

The above options all have the following default options.

➔ **PCI Device** (Default) The IRQ is assigned to legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PNP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

➔ **Reserved** The IRQ is reserved by BIOS.

➔ **x Memory Resources [Press Enter]**

The **Memory Resources** menu can only be accessed if the Resources Controlled By option is set to Manual. Use **Memory Resources** to select a base address and the length for the memory area used by a peripheral that requires high memory.

The menu has two configurable options:

- Reserved Memory Base
- Reserved Memory Length

➔ **PCI/VGA Palette Snoop [Disabled]**

Use the **PCI/VGA Palette Snoop** option to enable the system to determine whether or not some special VGA cards, high-end hardware MPEG decoders and other similar devices are allowed to look at the VGA palette on the video card so these devices can determine what colors are in use. This option is needed *very* rarely and should be left "Disabled" unless a video device specifically requires the setting to be enabled upon installation.

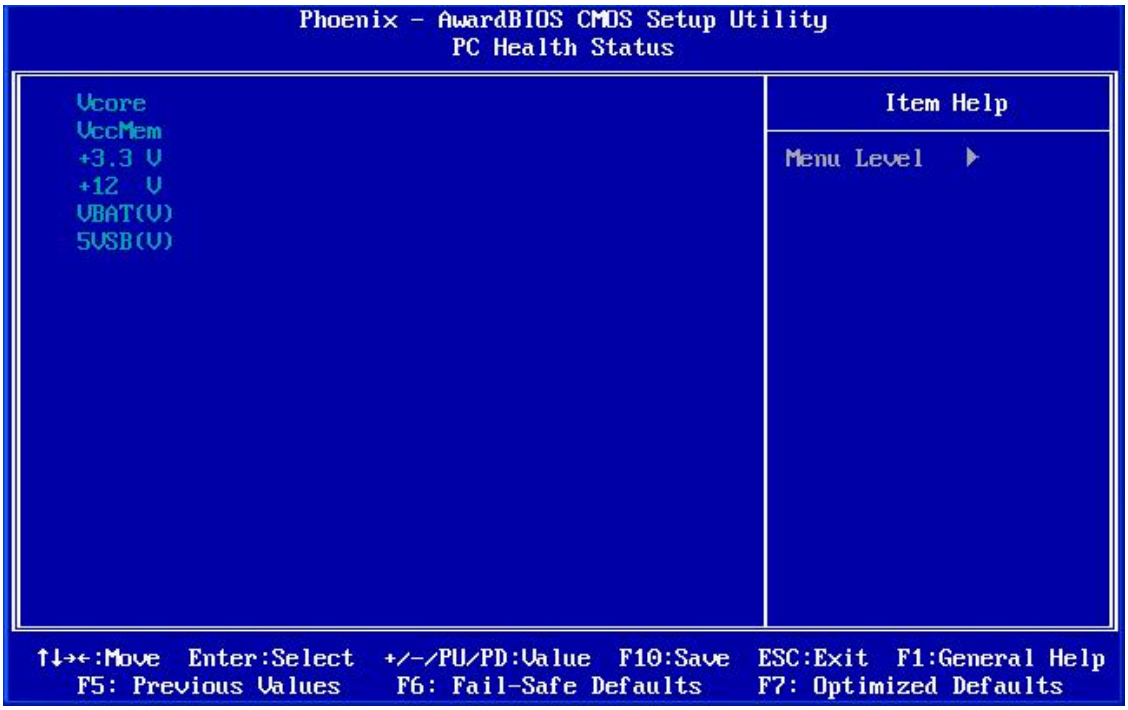
➔ **Disabled** (Default) Does not allow the graphics devices to examine the VGA

palette on the graphics card.

➔ **Enabled** Allows the graphics devices to examine the VGA palette on the graphics card.

5.8 PC Health Status

The **PC Health Status** menu (**BIOS Menu 10**) has no user configurable options, but shows system operating parameters that are essential to the stable operation of the system.



BIOS Menu 10: PC Health Status

The following system parameters are monitored by the **PC Health Status** menu.

➔ **Voltages**

The following voltages are monitored:

- Vcore
- VccMem

- +3.3 V
- +12 V
- VBAT(V)
- 5VSB(V)

Appendix

A

BIOS Configuration Options

A.1 BIOS Configuration Options

Below is a list of BIOS configuration options described in **Chapter 5**.

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Appendix

B

Software Drivers

B.1 Remote Management Tool

TOPSCCC provides optional pre-installed Windows XP Embedded or Windows CE 5.0 turnkey solutions tailored for the EXPERT series. For information about configuring the operating system, adding remote management tools or additional software and drivers, refer to the software user manuals on TOPSCCC EXPERT series Utility CD that came with the EXPERT series flat panel PC.

B.2 Touch Panel Driver

B.2.1 Introduction

The onboard touch panel controller enables analog resistive touch panels for four-wire, five-wire & eight-wire models. The controller directly communicates with the PC system through the touch panel communications interface. The controller design is superior in sensitivity, accuracy, and friendly operation. The touch panel driver emulates the left mouse button and the right mouse button functions.

The touch panel driver supports the following operating systems:

- Microsoft Windows versions:
  - Microsoft Windows 95
  - Microsoft Windows 98
  - Microsoft Windows ME
  - Microsoft Windows 2000
  - Microsoft Windows NT
  - Microsoft Windows XP
  - Microsoft Windows 3.1
- Microsoft Windows CE
- Linux
- QNX
- DOS.

Driver installation is described below.

B.2.2 Driver Installation

To install the touch panel software driver, please follow the steps below.

Step 1: Insert the driver CD that came with the EXPERT series into the CD drive.

Step 2: Once the CD drive is installed, the screen in **Figure C-1** appears.

Figure C-1: Driver CD Pop Up Screen

Step 3: Select the operating system installed on the system from the menu on the screen.

NOTE:

The following description is for driver installation using a Windows 2000 OS. If a different OS is installed, please refer to the driver user manual for the relevant OS. The driver user manuals can be accessed by selecting "**User Manual**" from the menu on the left side of the "**Driver CD Pop Up Screen**".

Step 4: Once the OS system is selected, a welcome screen appears (**Figure C-2**). To continue the installation process click **NEXT**.

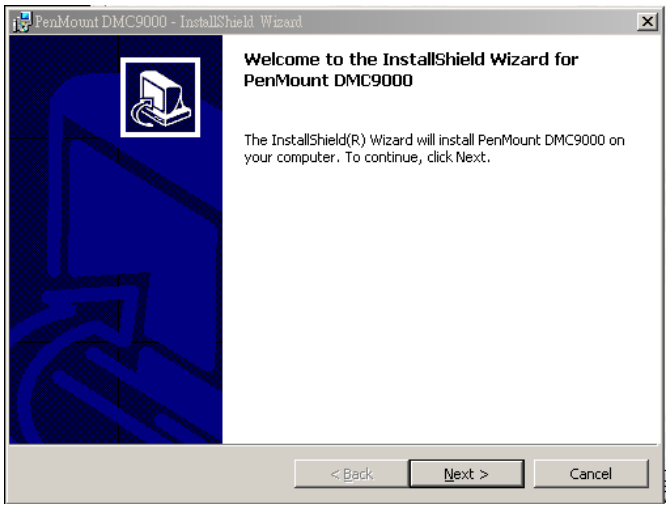

Figure C-2: Welcome Screen

Step 5: The license agreement shown in **Figure C-3** appears. Agree to the license by selecting "I accept the terms in the license agreement".

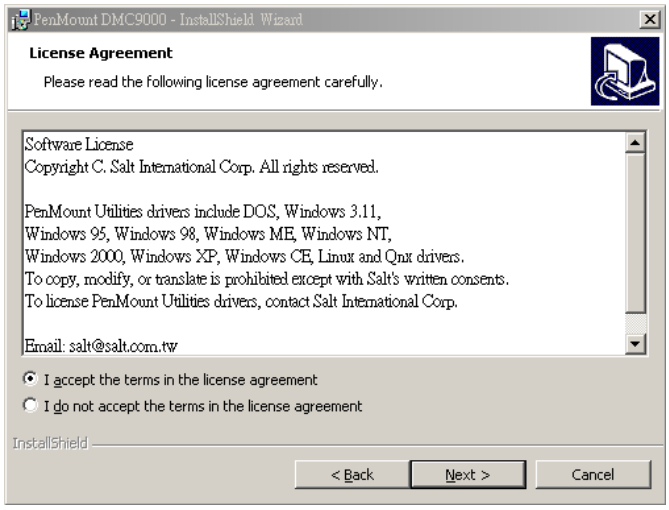

Figure C-3: License Agreement

Step 6: Click **NEXT** and the Installshield Wizard is ready to install the program (**Figure C-4**).

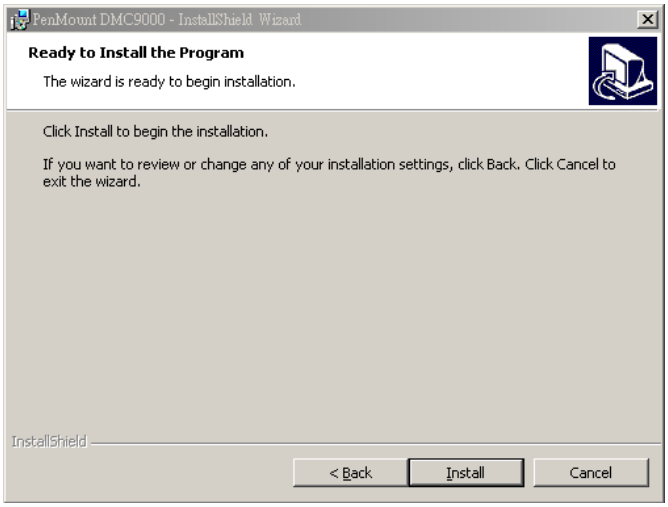

Figure C-4: Ready to Install the Program

Step 7: Click **INSTALL** to continue. The Installing PenMount DMC9000 screen appears as the program is installed (**Figure C-5**).

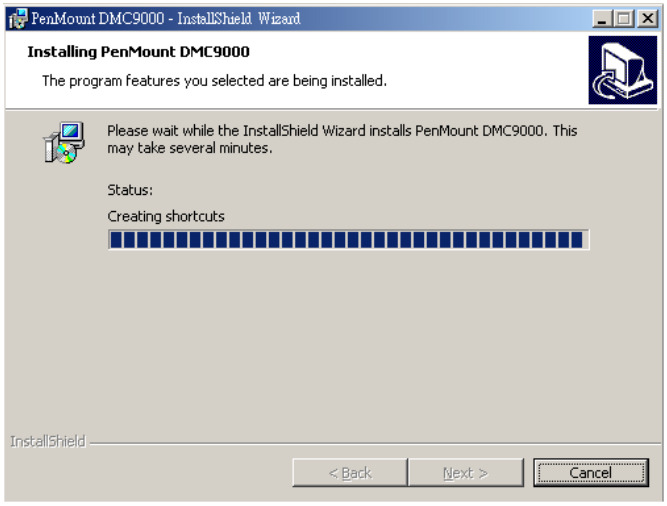

Figure C-5: Installing PenMount DMC9000

Step 8: The user is then prompted to select to restart the computer now or later (**Figure C-6**). For the settings to take effect, the computer must be restarted. Click **Yes** to restart the computer.

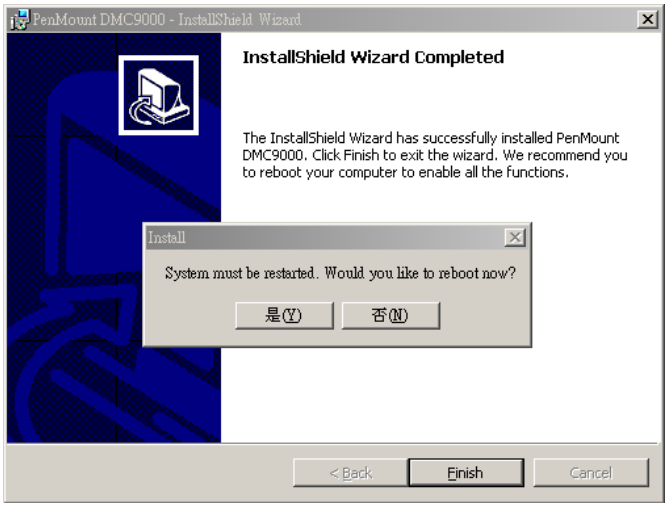

Figure C-6: Reboot the Computer

B.2.3 Touch Panel Driver Configuration

To configure the touch panel driver options, refer to the PenMount user manual located on the driver installation CD.

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